THE WALL-MOUNT™ AIR CONDITIONERS - WA (60HZ)

WA-SERIES Refrigerant 22 60Hz
1.5 to 5 Ton (18,300 to 57,500 Btuh)
Right Side Control Panel

The Bard Wall-Mount Air Conditioner is a self contained energy efficient system, which is designed to offer maximum indoor comfort at a minimal cost without using valuable indoor floor space or outside ground space. This unit is the ideal product for versatile applications such as: new construction, modular offices, school modernization, telecommunication structures, portable structures or correctional facilities. Factory or field installed accessories are available to meet specific job requirements.

MEA # 357-93-E

Engineered Features

Aluminum Finned Copper Coils:
Grooved tubing and enhanced louvered fin for maximum heat transfer and energy efficiency.

Twin Blowers:
Move air quietly. Most models feature multispeed blower motors providing airflow adjustment for high and low static operation. Motor overload protection is standard on all models.

Air Conditioner Compressor:
Reciprocating compressors with crankcase heater and dual discharge muffler are standard on 1.5 and 2 ton models.

Scroll Compressors eliminate need for crankcase heater. Standard on 2.5 to 5 ton, and available on 2 ton models.

Phase Rotation Monitor:
Standard on all 3 phase scroll compressors. Protects against reverse rotation if power supply is not properly connected. Not required on reciprocating compressors.

Galvanized 20 Gauge Zinc Coated Steel Cabinet:
Cleaned, rinsed, sealed and dried before the polyurethane primer is applied. The cabinet is handsomely finished with a baked on textured enamel, which allows it to withstand 1000 hours of salt spray tests per ASTM B117-03.

Electrical Components:
Are easily accessible for routine inspection and maintenance through a right side, service panel opening. Features a lockable, hinged access cover to the circuit breaker or pull disconnect switch.

Electric Heat Strips:
Features an automatic limit and thermal cut-off safety control. Heater packages can be factory or field installed for all 1.5 through 5 ton models.

One Inch, Disposable Air Filters:
Are standard equipment. Optional one inch washable filters available and filter racks permit the addition of 2" pleated filter. Factory or field installed.

Condenser Fan and Motor Shroud Assembly:
Slides out for easy access.

Barometric Fresh Air Damper:
Standard on all units. Allows up to 25% outside fresh air.

Built-in Circuit Breakers:
Standard on all electric heat versions of single (230/208 volt) and three phase (230/208 volt) equipment. Toggle disconnects are standard on all electric heat versions of three phase (460 volt) equipment.

Slope Top:
Standard feature for water run-off.

Full Length Mounting Brackets:
Built into cabinet for improved appearance and easy installation. NOTE: Bottom mounting bracket included to assist in installation.

Top Rain Flashing:
Standard feature on all models.

Ventilation System Packages

All packages are designed to meet your specific ventilation requirements utilizing one of five ventilation options for the product. The ventilation package is mounted within the unit eliminating the need for an exterior mounted hood or damper assembly on the unit. All assemblies can be factory installed, installed in the field at time of installation or as a retrofit system after installation.

- Standard - Barometric Fresh Air Damper
- Optional - Motorized Fresh Air Damper
- Optional - Blank off Plate
- Optional - Commercial Room Ventilator w/Exhaust
  - CRV - Spring Return
  - CRVP - Power Return
- Optional - Economizer w/ Exhaust
- Optional - Energy Recovery Ventilator

- Complies with efficiency requirements of ASHRAE/IESNA 90.1-2004.
- Certified to ANSI/ARI Standard 390-2003 for SPVU (Single Package Vertical Units).
- Commercial Product - Not intended for Residential application.

ARI PERFORMANCE CERTIFIED ARI Standard 390 Single Package Vertical AC www.aridirectory.org

c UL us LISTED

ISO 9001 UL REGISTERED FIRM FILE NO. A6887

Form No. S3208-607
Supersedes S3208-206

Clearances Required for Service Access and Adequate Condenser Air Flow

MODELS	LEFT SIDE	RIGHT SIDE
WA18, WA24, WA25, WA37	15"	20"
WA42, WA48, WA60	20"	20"

NOTE: For side by side installation of two (2) WA models there must be 20" between units. This can be reduced to 15" by using a WL model (left side compressor and controls) for the left unit and WA (right side compressor and controls) for right unit.
See WL Specifications S3279.

Minimum Clearances Required to Combustible Materials

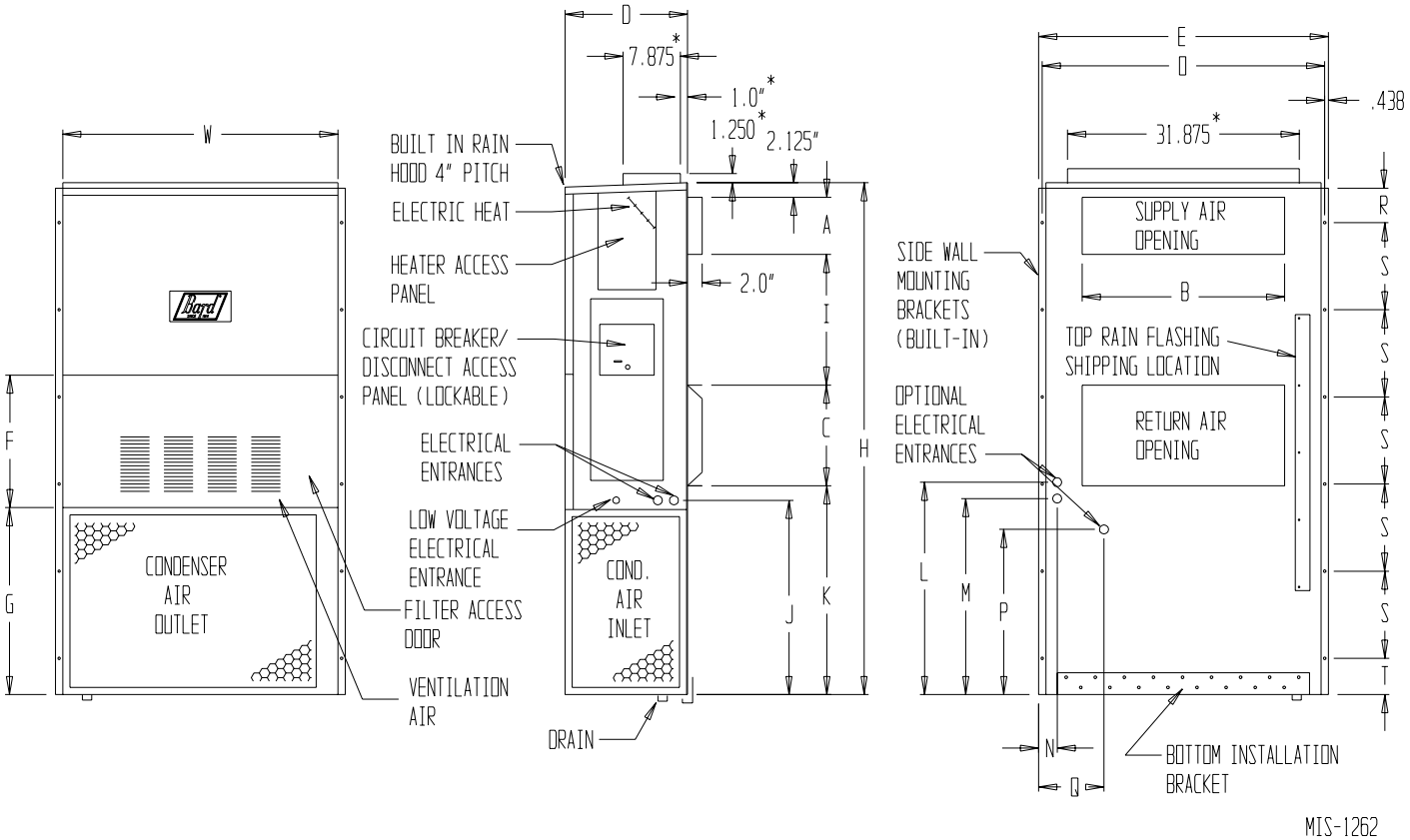
MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
WA18, WA24, WA25	0"	0"
WA30, WA37	1/4"	0"
WA42, WA48, WA60	1/4"	0"

① Refer to the Installation Manual for more detailed information.

Dimensions of Basic Unit for Architectural and Installation Requirements (Nominal)

MODEL	WIDTH (W)	DEPTH (D)	HEIGHT (H)	SUPPLY		RETURN																
				A	B	C	B	E	F	G	I	J	K	L	M	N	O	P	Q	R	S	T
WA18 WA24 WA25	33.300	17.125	70.563	7.88	19.88	11.88	19.88	35.00	18.50	25.75	20.56	26.75	28.06	29.25	27.00	2.63	34.13	22.06	10.55	4.19	12.00	5.00
WA30 WA37	38.200	17.125	70.563	7.88	27.88	13.88	27.88	40.00	18.50	25.75	17.93	26.75	28.75	29.25	27.00	2.75	39.19	22.75	9.14	4.19	12.00	5.00
WA42 WA48 WA60	42.075	22.432	84.875	9.88	29.88	15.88	29.88	43.88	19.10	31.66	30.00	32.68	26.94	34.69	32.43	3.37	42.88	23.88	10.00	2.00	16.00	1.88

All dimensions are in inches. Dimensional drawings are not to scale.



FRONT VIEW **SIDE VIEW** **BACK VIEW**

*Optional top outlet (factory installed only) for WA30 and WA37 models only.

Bard Manufacturing Company, Inc.
Bryan, Ohio 43506
www.bardhvac.com

CLIMATE CONTROL SOLUTIONS

Since 1914 . . . Moving ahead, just as planned

Due to our continuous product improvement policy, all specifications subject to change without notice.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

Form No. S3208 June, 2007

Supersedes S3208-206

Capacity and Efficiency Ratings

MODELS	WA182	WA242	WA253	WA302	WA372	WA423	WA484	WA602
Cooling Capacity BTUH ①	18,300	23,400	23,000	30,000	36,000	42,000	47,500	57,500
EER ②	9.20	9.20	9.80	9.30	9.20	9.20	9.60	8.70
SEER ③	10.20	10.50	11.00	10.60	10.00	10.60	11.00	10.20

① Capacity is certified in accordance with ANSI/ARI Standard 390-2003 and tested in accordance with ARI Standard 210/240-2006.
② EER = Energy Efficiency Ratio and is certified in accordance with ANSI/ARI Standard 390-2003.
③ SEER = Seasonal Energy Efficiency Ratio and is tested in accordance with ARI Standard 210/240-2006.
All ratings based on fresh air intake being 100% closed (no outside air introduction).

Specifications 1-1/2 Ton through 3 Ton

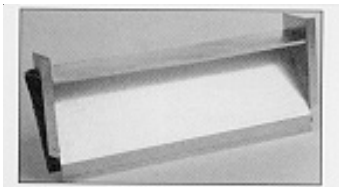
MODELS	WA182-A	WA242-A	WA242-B	WA242-C	WA253-A	WA253-B	WA302-A	WA302-B	WA302-C	WA372-A	WA372-B	WA372-C
Electrical Rating--60 Hz	230/208 - 1	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3
Operating Voltage Range	197-253	197-253	197-253	414-506	197-253	197-253	197-253	197-253	414-506	197-253	197-253	414-506
Compressor--Circuit A												
Voltage	230/208	230/208	230/208	460	230/208	230/208	230/208	230/208	460	230/208	230/208	460
Rated Load Amps	7.0/8.0	9.5/10.0	6.6/6.9	3.6	8.6/9.5	6.5/7.0	12.2/12.9	8.4/8.4	4.2	16.5/17.3	10.5/11.0	5.2
Branch Circuit Selection Current	9.0	10.0	7.0	4.0	10.3	7.1	14.1	9.0	4.5	17.3	11.0	5.5
Lock Rotor Amps	49/49	56/56	51/51	25	54/54	45/45	73/73	63/63	31	100/100	77/77	37
Compressor Type	Recip.	Recip.	Recip.	Recip.	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Fan Motor & Condenser												
Fan Motor--HP--RPM	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075
Fan Motor--Amps	1.2	1.2	1.2	1.4	1.2	1.2	1.5	1.5	1.4	1.5	1.5	1.4
Fan--DIA/CFM	18" - 1600	18" - 1600	18" - 1600	18" - 1600	18" - 1600	18" - 1600	20" - 2100	20" - 2100	20" - 2100	20" - 1900	20" - 1900	20" - 1900
Blower Motor & Evap.												
Blower Motor--HP-RPM-SPD	1/6-1100-1	1/6-1100-1	1/6-1100-1	1/3-1100-2	1/6-1100-1	1/6-1100-1	1/3-1100-2	1/3-1100-2	1/3-1100-2	1/3-1100-2	1/3-1100-2	1/3-1100-2
Blower Motor--Amps	1.0	1.0	1.0	1.1	1.0	1.0	2.2	2.2	1.1	2.2	2.2	1.1
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	650 - .40	800 - .20	800 - .20	800 - .20	800 - .20	800 - .20	1000 - .40	1000 - .40	1000 - .40	1100 - .30	1100 - .30	1100 - .30
Filter Sizes (inches) STD.	16x25x1	16x25x1	16x25x1	16x25x1	16x25x1	16x25x1	16x30x1	16x30x1	16x30x1	16x30x1	16x30x1	16x30x1
Shipping Weight --LBS.	300	300	300	300	300	300	355	355	355	355	355	355

Specifications 3-1/2 Ton through 5 Ton

MODELS	WA423-A	WA423-B	WA423-C	WA484-A	WA484-B	WA484-C	WA602-A	WA602-B	WA602-C
Electrical Rating--60 Hz	230/208-1	230/208-3	460-3	230/208-1	230/208-3	460-3	230/208-1	230/208-3	460-3
Operating Voltage Range	197-253	197-253	414-506	197-253	197-253	414-506	197-253	197-253	414-506
Compressor--Circuit A									
Voltage	230/208	230/208	460	230/208	230/208	460	230/208	230/208	460
Rated Load Amps	19.3/21	11.8/11.8	6.1	20.2/20.8	11.9/12.3	6.2	26.0/28.5	18.1/18.4	6.8
Branch Circuit Selection Current	21	12.5	6.5	21.8	12.9	6.5	29.0	19.0	9.0
Lock Rotor Amps	127/127	88/88	42	131/131	91/91	46	148/148	137/137	62
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Fan Motor & Condenser									
Fan Motor--HP-RPM-SPD	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2
Fan Motor--Amps	2.5	2.5	1.3	2.5	2.5	1.3	2.5	2.5	1.3
Fan--DIA/CFM	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600
Blower Motor & Evap.									
Blower Motor--HP-RPM-SPD	1/2-1070-2	1/2-1070-2	1/2-1070-2	1/2-1070-2	1/2-1070-2	1/2-1070-2	1/2-1070-2	1/2-1070-2	1/2-1070-2
Blower Motor--Amps	3.3	3.3	1.9	3.3	3.3	1.9	3.3	3.3	1.9
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	1400 - .30	1400 - .30	1400 - .30	1550 - .20	1550 - .20	1550 - .20	1700 - .30	1700 - .30	1700 - .30
Filter Sizes (inches) STD.	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1
Shipping Weight --LBS.	500	500	500	500	500	500	500	500	500

Ventilation System Packages

Bard Wall-Mounts are designed to provide optional ventilation packages to meet all of your ventilation and indoor air quality requirements. All units are equipped with a barometric fresh air damper as the standard ventilation package. All ventilation packages can be built-in at the factory or field-installed at a later date.



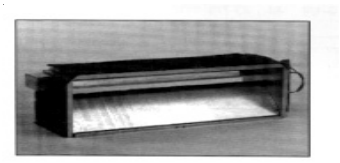
Barometric Fresh Air Damper

BAROMETRIC FRESH AIR DAMPER - BFAD — STANDARD

The barometric fresh air damper is a standard feature on all models. It is installed on the inside of the service door and allows outside ventilation air, up to 25% of the total airflow rating of the unit, to be introduced through the air inlet openings and to be mixed with the conditioned air. The damper opens during blower operation and closes when the blower is off. Adjustable blade stops allow different amounts of outside air to be introduced into the building and can be easily locked closed if required.

BLANK OFF PLATE - BOP — OPTIONAL

A blank off plate is installed on the inside of the service door. It covers the air inlet openings, which restricts any outside air from entering the unit. The blank off plate should be utilized in applications where outside air is not required to be mixed with the conditioned air.



Motorized Fresh Air Damper

MOTORIZED FRESH AIR DAMPER - MFAD — OPTIONAL

The motorized fresh air damper is internally mounted behind the service door and allows outside ventilation air, up to 25% of the total airflow rating of the unit, to be introduced through the air inlet openings and to be mixed with the conditioned air. The two position damper can be fully open or closed. The damper blade is powered open by a 24VAC motor with spring return on power loss. The damper can be controlled by indoor blower operation or can be field connected to be managed based on building occupancy.

NOTE: The above vent systems are intake only without built-in exhaust capability. Building will likely require separate field installed barometric relief or mechanical exhaust elsewhere within the conditioned space. Balancing dampers in the return air grille may be required to achieve specified amount of outdoor air intake.

Commercial Room Ventilator

COMMERCIAL ROOM VENTILATOR - CRV — OPTIONAL

The built-in commercial room ventilator is internally mounted behind the service door and allows outside ventilation air, up to 50% of the total airflow rating of the unit, to be introduced through the air inlet openings. It includes a built-in exhaust air damper.

The commercial room ventilator (CRV) is a simple and innovative approach to improving the indoor air quality by providing fresh air intake and exhaust capability through the CRV. The damper can be easily adjusted to control the amount of fresh air supplied into the building. The CRV can be controlled by indoor blower operation or field controlled based on room occupancy. Two versions available (except on 1.5 and 2-Ton models). The CRV and CRVS are power open - spring return on power loss, and CRVP is power open and power close. Complies with ANSI/ASHRAE Standard 62.1 “Ventilation for Acceptable Indoor Air Quality”.

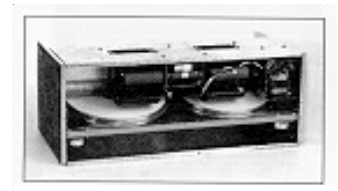
Economizer

ECONOMIZER - EIFM — OPTIONAL

The built-in economizer system is internally mounted behind the service door and allows outdoor air to be introduced through the air inlet openings. The amount of outdoor air varies in response to the system controls and settings defined by the end user. It includes a built-in exhaust air damper. The economizer is designed to provide “free cooling” when outside air conditions are cool and dry enough to satisfy cooling requirements without running the compressor. This in turn provides lower operating costs, while extending the life of the compressor.

Standard Features:

- One Piece Construction - Easy to install with no mechanical linkage adjustment required.
- Exhaust Air Damper - Built in with positive closed position. Provides exhaust air capability to prevent pressurization of tight buildings.
- Actuator Motor - 24 volt, power open, spring return with built in torque limiting switch.
- Proportioning Type Control - for maximum “free cooling” economy and comfort.
- Moisture Eliminator & Prefilter - permanent, washable aluminum construction.
- Enthalpy Control - adjustable to monitor outdoor temperature and humidity.
- Minimum Position Potentiometer - adjustable to control minimum damper blade position for ventilation purposes.
- Mixed Air Sensor - to monitor outside and return air to automatically modulate damper position.



Energy Recovery Ventilator

WALL-MOUNT ENERGY RECOVERY VENTILATOR - WERV — OPTIONAL

The wall-mount energy recovery ventilator (WERV) is a highly innovative approach to meeting indoor air quality ventilation requirements as established by ANSI/ASHRAE Standard 62.1. The WERV allows from 200 to 450 CFM (depending upon model) of fresh air and exhaust through the unit while maintaining superior indoor comfort and humidity levels. In most cases this can be accomplished without increasing equipment sizing or operating costs. Heat transfer efficiency is up to 67% during summer and 75% during winter conditions.

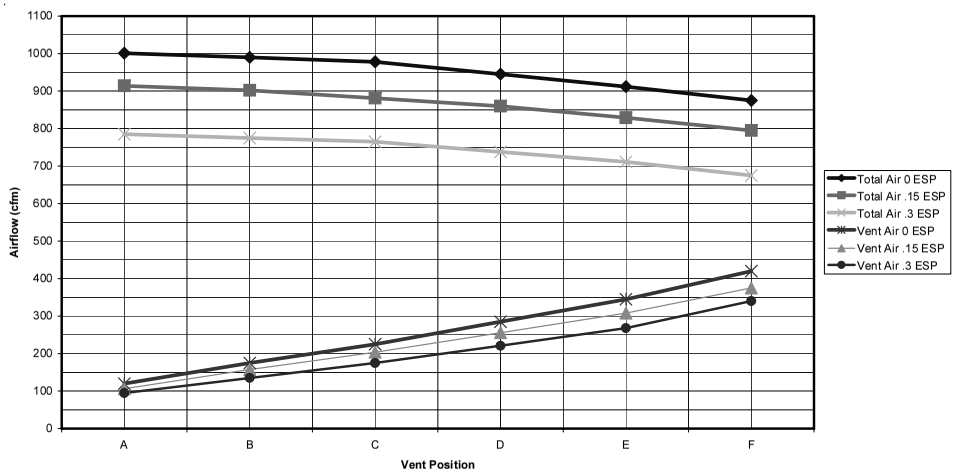
The WERV consists of a unique “rotary energy recovery cassette” that provides effective sensible and latent heat transfer capabilities during summer and winter conditions. Various control schemes are addressed including limiting ventilation during building occupancy only.

The WERV is designed to be internally mounted behind the service door in the WA, WH or WL model wall-mount units. It can be built-in at the factory or field installed as an option. WERV-*3C and WERV-*5C can be independently adjusted for intake and exhaust rates.

Manufactured under U.S. Patent Nos. 5,485,878; 5,301,744; 5,002,116; 4,924,934; 4,875,520; 4,825,936; 6,310,330.

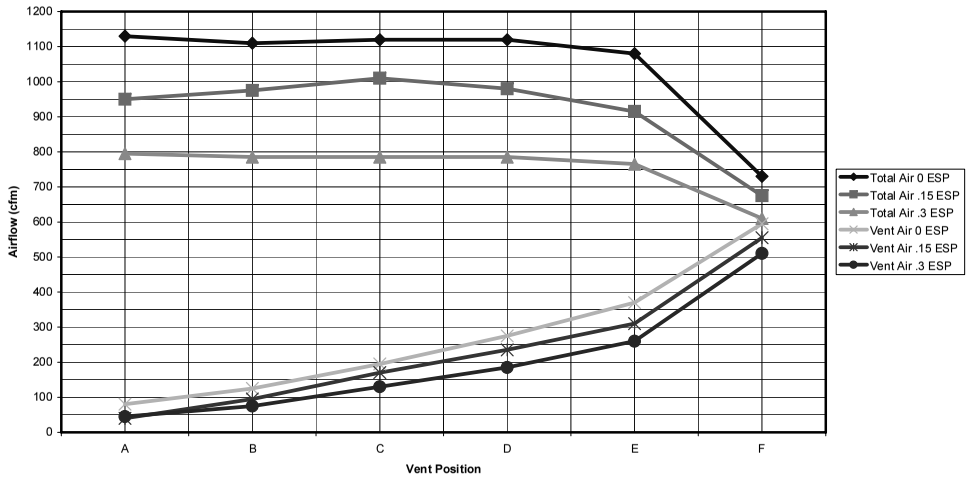
Commercial Room Ventilator Performance Data - CRV-2

WA18, WA24 & WA25 TOTAL AND VENTILATION AIRFLOW

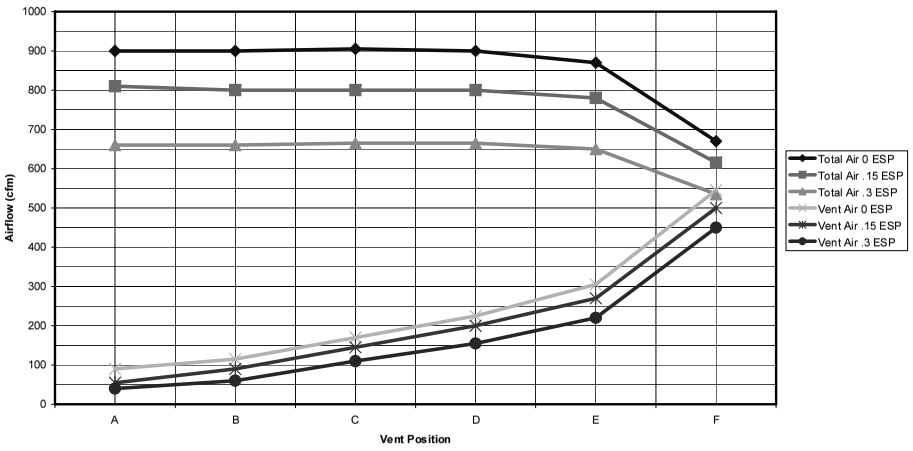


Commercial Room Ventilator Performance Data - CRVS-3 and CRVP-3

WA30 & WA37 HIGH SPEED TOTAL AND VENTILATION AIRFLOW

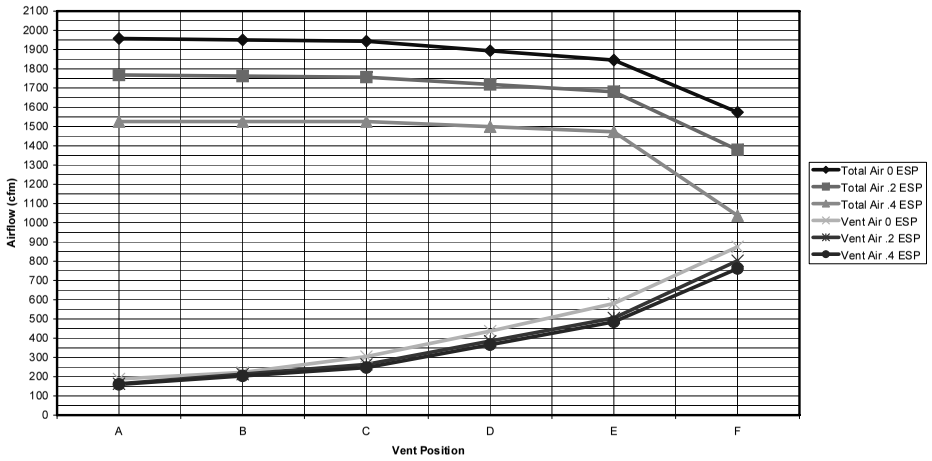


WA30 & WA37 LOW SPEED TOTAL AND VENTILATION AIRFLOW

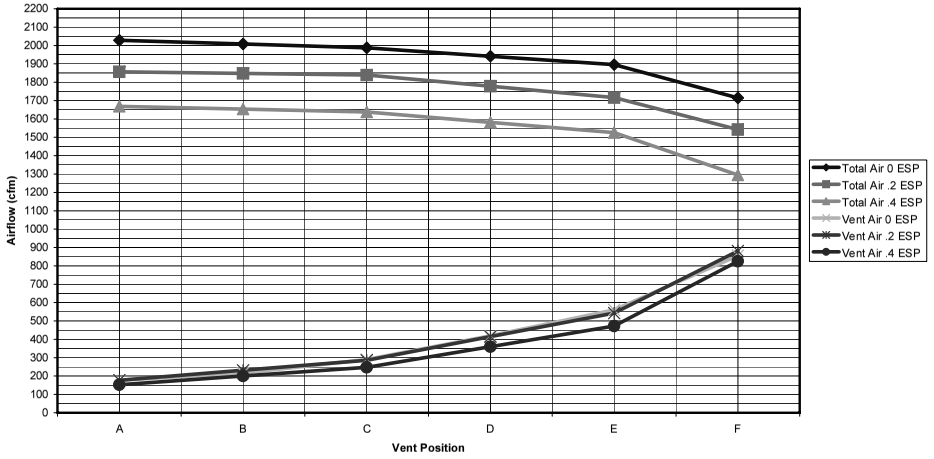


Commercial Room Ventilator Performance Data - CRVS-5 and CRVP-5

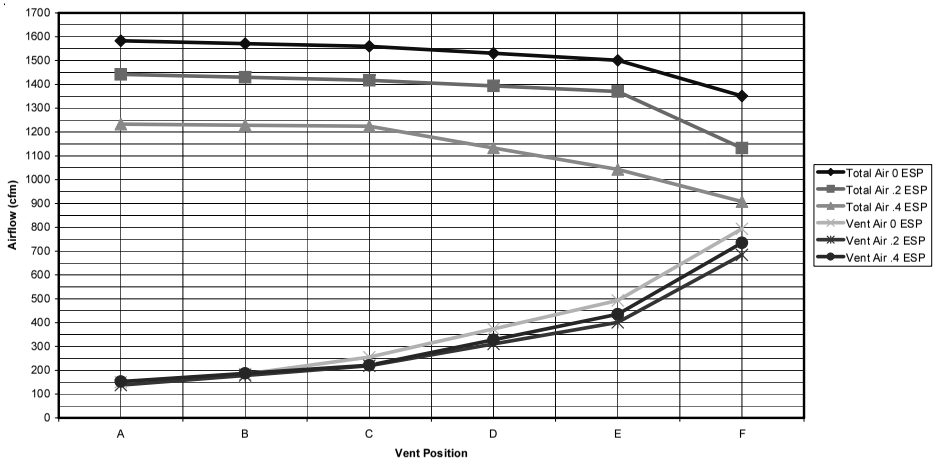
WA42 & WA48 HIGH SPEED TOTAL AND VENTILATION AIRFLOW



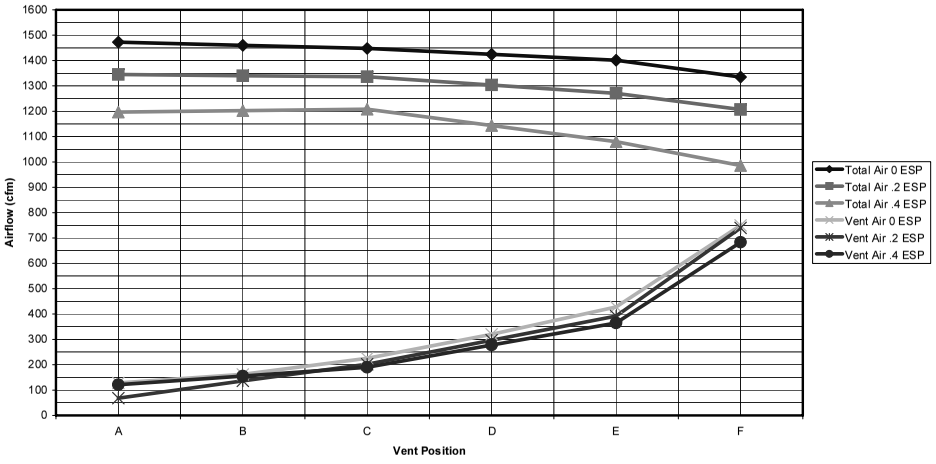
WA60 HIGH SPEED TOTAL AND VENTILATION AIRFLOW



WA42 & WA48 LOW SPEED TOTAL AND VENTILATION AIRFLOW



WA60 LOW SPEED TOTAL AND VENTILATION AIRFLOW



*Performance and Application Data- WERV-*2B*

SUMMER COOLING PERFORMANCE
(INDOOR DESIGN CONDITIONS 75°DB/62°WB)

Ambient O.D.		VENTILATION RATE -- 250 CFM 62% EFFICIENCY						VENTILATION RATE -- 225 CFM 63% EFFICIENCY						VENTILATION RATE -- 200 CFM 63% EFFICIENCY					
DB/ WB	F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
	75	11925	8100	1325	7394	5022	822	10727	7287	3441	6758	4591	2168	9540	6480	3060	6010	4082	1928
105	70	8100	8100	0	5022	5022	0	7287	7287	0	4591	4591	0	6480	6480	0	4082	4082	0
	65	8100	8100	0	5022	5022	0	7287	7287	0	4591	4591	0	6480	6480	0	4082	4082	0
	80	17550	6750	10800	10881	4185	6696	15788	6072	9716	9946	3826	6121	14040	5400	8640	8845	3402	5443
	75	11925	6750	5175	7394	4185	3209	10727	6072	4655	6758	3826	2933	9540	5400	4140	6010	3402	2608
100	70	6863	6750	113	4255	4185	70	6173	6072	101	3889	3826	64	5490	5400	90	3458	3402	56
	65	6750	6750	0	4185	4185	0	6072	6072	0	3826	3826	0	5400	5400	0	3402	3402	0
	60	6750	6750	0	4185	4185	0	6072	6072	0	3826	3826	0	5400	5400	0	3402	3402	0
	80	17550	5400	12150	10881	3348	7533	15788	4858	10930	9946	3060	6886	14040	4320	9720	8845	2722	6124
	75	11925	5400	6525	7394	3348	4046	10727	4858	5870	6758	3060	3698	9540	4320	5220	6010	2722	3289
95	70	6863	5400	1463	4255	3348	907	6173	4858	1315	3889	3060	829	5490	4320	1170	3458	2722	737
	65	5400	5400	0	3348	3348	0	4858	4858	0	3060	3060	0	4320	4320	0	2722	2722	0
	60	5400	5400	0	3348	3348	0	4858	4858	0	3060	3060	0	4320	4320	0	2722	2722	0
	80	17550	4050	13500	10881	2511	8370	15788	3643	12145	9946	2295	7651	14040	3240	10800	8845	2041	6804
	75	11925	4050	7875	7394	2511	4883	10727	3643	7084	6758	2295	4463	9540	3240	6300	6010	2041	3969
90	70	6863	4050	2813	4255	2511	1744	6173	3643	2530	3889	2295	1594	5490	3240	2250	3458	2041	1417
	65	4050	4050	0	2511	2511	0	3643	3643	0	2295	2295	0	3240	3240	0	2041	2041	0
	60	4050	4050	0	2511	2511	0	3643	3643	0	2295	2295	0	3240	3240	0	2041	2041	0
	80	17550	2700	14850	10881	1674	9207	15788	2429	13359	9946	1530	8416	14040	2160	11880	8845	1361	7484
	75	11925	2700	9225	7394	1674	5720	10727	2429	8298	6758	1530	5228	9540	2160	7380	6010	1361	4649
85	70	6863	2700	4163	4255	1674	2581	6173	2429	3744	3889	1530	2359	5490	2160	3300	3458	1361	2098
	65	2700	2700	0	1674	1674	0	2429	2429	0	1530	1530	0	2160	2160	0	1361	1361	0
	60	2700	2700	0	1674	1674	0	2429	2429	0	1530	1530	0	2160	2160	0	1361	1361	0
	75	11925	1350	10575	7394	837	6557	10727	1214	9513	6758	765	5993	9540	1080	8460	6010	680	5330
	70	6863	1350	5513	4255	837	3418	6173	1214	4959	3889	765	3124	5490	1080	4410	3458	680	2778
80	65	2363	1350	1013	1465	837	628	2125	1214	911	1339	765	547	1890	1080	810	1190	680	510
	60	1350	1350	0	837	837	0	1214	1214	0	765	765	0	1080	1080	0	680	680	0
	70	6863	0	6863	4255	0	4255	6173	0	6173	6889	0	3889	5490	0	5490	3458	0	3458
75	65	2363	0	2363	1465	0	1465	2125	0	2125	1339	0	1339	1890	0	1890	1190	0	1190
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WERV-*2B WINTER HEATING PERFORMANCE
(INDOOR DESIGN CONDITIONS 70°F DB)

Ambient O.D.	VENTILATION RATE					
	250 CFM 74% EFF.		225 CFM 75% EFF.		200 CFM 75% EFF.	
DB/°F	WVL	WHR	WVL	WHR	WVL	WHR
65	1350	999	1214	911	1080	810
60	2700	1998	2429	1822	2160	1620
55	4050	2997	3643	2733	3240	2430
50	5400	3996	4858	3643	4320	3240
45	6750	4995	6072	4554	5400	4050
40	8100	5994	7287	5465	6480	4860
35	9450	6993	8501	6376	7560	5670
30	10800	7992	9716	7287	8640	6480
25	12150	8991	10930	8198	9720	7290
20	13500	9990	12145	9108	10800	8100
15	14850	10989	13359	10019	11880	8910

NOTE: Sensible performance only is shown for winter application.

LEGEND:

VLT = Ventilation Load - Total
VLS = Ventilation Load - Sensible
VLL = Ventilation Load - Latent
HRT = Heat Recovery - Total
HRS = Heat Recovery - Sensible
HRL = Heat Recovery - Latent
WVL = Winter Ventilation Load
WHR = Winter Heat Recovery

Performance and Application Data- WERV-*3C

SUMMER COOLING PERFORMANCE
(INDOOR DESIGN CONDITIONS 75°DB/62°WB)

Ambient O.D.		VENTILATION RATE -- 400CFM 63% EFFICIENCY						VENTILATION RATE -- 325 CFM 64% EFFICIENCY						VENTILATION RATE -- 250 CFM 65% EFFICIENCY					
DB/ WB	F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
105	75	19080	12960	6120	12020	8164	3855	15502	10530	4972	9921	6739	3182	11925	8100	3825	7751	5265	2486
	70	12960	12960	0	8164	8164	0	10530	10530	0	6739	6739	0	8100	8100	0	5265	5265	0
	65	12960	12960	0	8164	8164	0	10530	10530	0	6739	6739	0	8100	8100	0	5265	5265	0
100	80	28080	10800	17280	17690	6804	10886	22815	8775	14040	14601	5616	8985	17550	6750	10800	11407	4387	7019
	75	19080	10800	8280	12020	6804	5216	15502	8775	6727	9921	5616	4305	11925	6750	5175	7751	4387	3363
	70	10980	10800	180	6717	6804	113	8921	8775	146	5709	5616	93	6862	6750	112	4460	4387	73
	65	10800	10800	0	6804	6804	0	8775	8775	0	5616	5616	0	6750	6750	0	4387	4387	0
	60	10800	10800	0	6804	6804	0	8775	8775	0	5616	5616	0	6750	6750	0	4387	4387	0
95	80	28080	8640	19440	17690	5443	12247	22815	7020	15795	14601	4492	10108	17550	5400	12150	11407	3510	7897
	75	19080	8640	10440	12020	5443	6577	15502	7020	8482	9921	4492	5428	11925	5400	6525	7751	3510	4241
	70	10980	8640	2340	6917	5443	1474	8921	7020	1901	5709	4492	1216	6862	5400	1462	4460	3510	950
	65	8640	8640	0	5443	5443	0	7020	7020	0	4492	4492	0	5400	5400	0	3510	3510	0
	60	8640	8640	0	5443	5443	0	7020	7020	0	4492	4492	0	5400	5400	0	3510	3510	0
90	80	28080	6480	21600	17690	4082	13608	22815	5265	17550	14601	3369	11232	17550	4050	13500	11407	2632	8774
	75	19080	6480	12600	12020	4082	7938	15502	5265	10237	9921	3369	6552	11925	4050	7875	7751	2632	5118
	70	10980	6480	4500	6917	4082	2835	8921	5265	3656	5709	3369	2340	6862	4050	2812	4460	2632	1828
	65	6480	6480	0	4082	4082	0	5265	5265	0	3369	3369	0	4050	4050	0	2632	2632	0
	60	6480	6480	0	4082	4082	0	5265	5265	0	3369	3369	0	4050	4050	0	2632	2632	0
85	80	28080	4320	23760	17690	2721	14968	22815	3510	19305	14601	2246	12355	17550	2700	14850	11407	1755	9652
	75	19080	4320	14760	12020	2721	9298	15502	3510	11992	9921	2246	7675	11925	2700	9225	7751	1755	5996
	70	10980	4320	6660	6917	2721	4195	8921	3510	5411	5709	2246	3463	6862	2700	4162	4460	1755	2705
	65	4320	4320	0	2721	2721	0	3510	3510	0	2246	2246	0	2700	2700	0	1755	1755	0
	60	4320	4320	0	2721	2721	0	3510	3510	0	2246	2246	0	2700	2700	0	1755	1755	0
80	75	19080	2160	16920	12020	1360	10659	15502	1755	13747	9921	1123	8798	11925	1350	10575	7751	877	6873
	70	10980	2160	8820	6917	1360	5556	8921	1755	7166	5709	1123	4586	6862	1350	5512	4460	877	3583
	65	3780	2160	1620	2381	1360	1020	3071	1755	1316	1965	1123	842	2362	1350	1012	1535	877	658
	60	2160	2160	0	1360	1360	0	1755	1755	0	1123	1123	0	1350	1350	0	877	877	0
75	70	10980	0	10980	6917	0	6917	8921	0	8921	5709	0	5709	6862	0	6862	4460	0	4460
	65	3780	0	3780	2381	0	2380	3071	0	3071	1965	0	1965	2362	0	2362	1535	0	1535
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Performance and Application Data- WERV-*5C

SUMMER COOLING PERFORMANCE
(INDOOR DESIGN CONDITIONS 75°DB/62°WB)

Ambient O.D.		VENTILATION RATE 450 CFM						VENTILATION RATE 375 CFM						VENTILATION RATE 300 CFM					
DB/ WB	F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
105	75	21465	14580	6884	13952	9477	4475	17887	12150	5737	11805	8018	3786	14310	9720	4590	9587	6512	3075
	70	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
	65	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
100	80	31590	12150	19440	20533	7897	12635	26325	10125	16200	17374	6682	10692	21060	8100	12960	14110	5427	8683
	75	21465	12150	9314	13952	7897	6054	17887	10125	7762	11805	6682	5123	14310	8100	6210	9587	5427	4160
	70	12352	12150	202	8029	7897	131	10293	10125	168	6793	6682	111	8235	8100	135	5517	5427	90
	65	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
	60	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
95	80	31590	9720	21870	20533	6318	14215	26325	8100	18225	17374	5345	12028	21060	6480	14580	14110	4341	9768
	75	21465	9720	11744	13952	6318	7634	17887	8100	9787	11805	5345	6459	14310	6480	7830	9587	4341	5246
	70	12352	9720	2632	8029	6318	1711	10293	8100	2193	6793	5345	1447	8235	6480	1755	5517	4341	1175
	65	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
	60	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
90	80	31590	7290	24300	20533	4738	15794	26325	6075	20250	17374	4009	13365	21060	4860	16200	14110	3256	10854
	75	21465	7290	14175	13952	4738	9213	17887	6075	11812	11805	4009	7796	14310	4860	9450	9587	3256	6331
	70	12352	7290	5062	8029	4738	3290	10293	6075	4218	6793	4009	2784	8235	4860	3375	5517	3256	2261
	65	7290	7290	0	4738	4738	0	6075	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
	60	7290	7290	0	4738	4738	0	6075	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
85	80	31590	4860	26730	20533	3159	17374	26325	4050	22275	17374	2672	14701	21060	3240	17820	14110	2170	11939
	75	21465	4860	16605	13952	3159	10793	17887	4050	13837	11805	2672	9132	14310	3240	11070	9587	2170	7416
	70	12352	4860	7492	8029	3159	4870	10293	4050	6243	6793	2672	4120	8235	3240	4995	5517	2170	3346
	65	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
	60	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
80	75	21465	2430	19035	13952	1579	12372	17887	2025	15862	11805	1336	10469	14310	1620	12690	9587	1085	8502
	70	12352	2430	9922	8029	1579	6449	10293	2025	8268	6793	1336	5457	8235	1620	6615	5517	1085	4432
	65	4252	2430	1822	2764	1579	1184	3543	2025	1518	2338	1336	1002	2835	1620	1215	1899	1085	814
	60	2430	2430	0	1579	1579	0	2025	2025	0	1336	1336	0	1620	1620	0	1085	1085	0
75	70	12352	0	12352	8029	0	8029	10293	0	10293	6793	0	6793	8235	0	8235	5517	0	5517
	65	4252	0	4252	2764	0	2764	3543	0	3543	2338	0	2338	2835	0	2835	1899	0	1899
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WERV-*3C WINTER HEATING PERFORMANCE
(INDOOR DESIGN CONDITIONS 70°F DB)

Ambient O.D.	VENTILATION RATE					
	400 CFM 75% EFF.		325 CFM 76% EFF.		250 CFM 77% EFF.	
DB/°F	WVL	WHR	WVL	WHR	WVL	WHR
65	2160	1620	1755	1333	1350	1039
60	4320	3240	3510	2667	2700	2079
55	6480	4860	5265	4001	4050	3118
50	8640	6480	7020	5335	5400	4158
45	10800	8100	8775	6669	6750	5197
40	12960	9720	10530	8002	8100	6237
35	15120	11340	12285	9336	9450	7276
30	17280	12960	14040	10670	10800	8316
25	19440	14580	15795	12004	12150	9355
20	21600	16200	17550	13338	13500	10395
15	23760	17820	19305	14671	14850	11434

NOTE: Sensible performance only is shown for winter application.

LEGEND:

VLT = Ventilation Load - Total
VLS = Ventilation Load - Sensible
VLL = Ventilation Load - Latent
HRT = Heat Recovery - Total
HRS = Heat Recovery - Sensible
HRL = Heat Recovery - Latent
WVL = Winter Ventilation Load
WHR = Winter Heat Recovery

WERV-*5C WINTER HEATING PERFORMANCE
(INDOOR DESIGN CONDITIONS 70°F DB)

Ambient O.D.	VENTILATION RATE					
	450 CFM		375 CFM		300 CFM	
DB/°F	WVL	WHR	WVL	WHR	WVL	WHR
65	2430	1944	2025	1640	1620	1328
60	4860	3888	4050	3280	3240	2656
55	7290	5832	6075	4920	4860	3985
50	9720	7776	8100	6561	6480	5313
45	12150	9720	10125	8201	8100	6642
40	14580	11664	12150	9841	9720	7970
35	17010	13608	14175	11481	11340	9298
30	19440	15552	16200	13122	12960	10627
25	21870	17496	18225	14762	14580	11955
20	24300	19440	20250	16402	16200	13284
15	26730	21384	22275	18042	17820	14612

NOTE: Sensible performance only is shown for winter application.

Electrical Specifications

Model	Rated Volts and Phase	No. Field Power Circuits	Single Circuit				Dual Circuit							
			③ Minimum Circuit Ampacity	① Maximum External Fuse or Ckt. Brkr.	② Field Power Wire Size	② Ground Wire	③ Minimum Circuit Ampacity		① Maximum External Fuse or Ckt. Brkr.		② Field Power Wire Size		② Ground Wire Size	
							Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B
WA182 - A00, A0Z	230/208-1	1	16	20	12	12								
A05		1	30	30	10	10								
A08		1	45	45	8	10								
A10		1	56	60	6	10								
WA242 - A00, A0Z	230/208-1	1	17	20	12	12								
A05		1	30	30	10	10								
A08		1	45	45	8	10								
A10		1	56	60	6	10								
WA242 - B00, B0Z	230/208-3	1	13	15	14	12								
B06		1	22	25	10	10								
WA242 - C00, C0Z	460-3	1	8	15	14	14								
C06		1	11	15	14	14								
WA253 - A00, A0Z	230/208-1	1	18	25	10	10								
A05		1	30	30	10	10								
A08		1	45	45	8	10								
A10		1	56	60	6	10								
WA253 - B00, B0Z	230/208-3	1	14	20	12	12								
B06		1	22	25	10	10								
WA302 - A00*, A0Z*	230/208-1	1	24	35	8	10								
A05*		1	31	35	8	10								
A08		1	47	50	8	10								
A10*		1	57	60	6	10								
A15		1 or 2	83	90	4	8	57	26	60	30	6	10	10	10
WA302 - B00*, B0Z*	230/208-3	1	17	20	12	12								
B06		1	23	25	10	10								
B09*		1	32	35	8	10								
B15		1	50	50	8	10								
WA302 - C00*, C0Z*	460-3	1	10	15	14	14								
C06		1	12	15	14	14								
C09*		1	17	20	12	12								
C15		1	26	30	10	10								
WA372 - A00*, A0Z*	230/208-1	1	28	35	8	10								
A05*		1	32	35	8	10								
A08		1	47	50	8	10								
A10*		1	58	60	6	10								
A15		1 or 2	84	90	4	8	57	26	60	30	6	10	10	10
WA372 - B00*, B0Z*	230/208-3	1	20	25	10	10								
B06		1	24	25	10	10								
B09*		1	33	35	8	10								
B15		1	51	60	6	10								
WA372 - C00*, C0Z*	460-3	1	11	15	14	14								
C06		1	12	15	14	14								
C09*		1	17	20	10	10								
C15		1	26	30	10	10								
WA423 - A00, A0Z	230/208-1	1	35	50	8	10								
A05		1	35	50	8	10								
A10		1	59	60	6	10								
A15		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
A20		1 or 2	110	110	2	6	59	52	60	60	6	6	10	10
WA423 - B00, B0Z	230/208-3	1	24	35	8	10								
B09		1	34	35	8	10								
B15		1	52	60	6	10								
B18		1	60	60	6	10								
WA423 - C00, C0Z	460-3	1	13	15	14	14								
C09		1	17	20	12	12								
C15		1	26	30	10	10								
WA484 - A00, A0Z	230/208-1	1	36	50	8	10								
A05		1	36	50	8	10								
A10		1	59	60	6	10								
A15		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
A20		1 or 2	110	110	2	6	59	52	60	60	6	6	10	10
WA484 - B00, B0Z	230/208-3	1	25	35	8	10								
B09		1	34	35	8	10								
B15		1	52	60	6	10								
B18		1	60	60	6	10								
WA484 - C00, C0Z	460-3	1	13	15	14	14								
C09		1	17	20	12	12								
C15		1	26	30	10	10								
WA602 - A00, A0Z	230/208-1	1	44	60	8	10								
A05		1	44	60	8	10								
A10		1	59	60	6	10								
A15		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
A20		1 or 2	110	110	2	6	59	52	60	60	6	6	10	10
WA602 - B00, B0Z	230/208-3	1	32	45	8	10								
B09		1	34	45	8	10								
B15		1	52	60	6	10								
B18		1	60	60	6	10								
WA602 - C00, C0Z	460-3	1	16	20	12	12								
C09		1	17	20	12	12								
C15		1	26	30	10	10								

① Maximum size of the time delay fuse or HACR type circuit breaker for protection of field wiring conductors.
② Based on 75C copper wire. All wiring must conform to the National Electrical Code and all local codes.
③ These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electrical code (latest version), Article 310 for power conductor sizing.

Caution: When more than one field power circuit is run through one conduit, the conductors must be derated. Pay special attention to note 8 of Table 310 regarding Ampacity Adjustment Factors when more than three (3) current carrying conductors are in a raceway.

* Top outlet supply option is available only factory installed and only on the selected models.

IMPORTANT: While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses and conductor wires in accordance with the National Electrical Code and all local codes.

Indoor Blower Performance - CFM at 230 or 460 Volts

ESP in H_2O	WA182 WA242 WA253	WA302 WA372		WA423 WA484		WA602	
	Dry/Wet Coil	High Speed Dry/Wet Coil	Low Speed Dry/Wet Coil	High Speed Dry/Wet Coil	Low Speed Dry/Wet Coil	High Speed Dry/Wet Coil	Low Speed Dry/Wet Coil
0	1020/975	1395/1315	950/935	1885/1800	1650/1600	2200/2000	1600/1450
.1	960/905	1340/1270	930/915	1770/1665	1550/1500	2100/1900	1525/1375
.2	865/800	1285/1190	910/885	1635/1550	1450/1400	2000/1800	1465/1200
.3	820/735	1205/1100	855/830	1500/1400	1350/1300	1875/1700	-/-
.4	735/650	1110/1000	800/755	1370/1285	1300/1175	1775/1600	-/-
.5	615/535	1005/870	-/-	1250/1150	-/-	1650/1475	-/-

Above data is with 1" standard throwaway filter and 1" washable filter.
For optional 2" pleated filter - reduce ESP by .15 in.
See installation instructions for maximum ESP information on various KW application.

Electric Heat Table - Refer to Electrical Specifications for Availability by Unit Model

Nominal KW	At 240V (1)				At 208V (1)				At 480V (2)			At 460V (2)		
	Kw	1-Ph Amps	3-Ph Amps	Btuh	Kw	1-Ph Amps	3-Ph Amps	Btuh	Kw	3-Ph Amps	Btuh	Kw	3-Ph Amps	Btuh
5.0	5.0	20.8		17,065	3.75	18.0		12,799						
6.0	6.0		14.4	20,478	4.50		12.5	15,359	6.0	7.2	20,478	5.52	6.9	18,840
8.0	8.0	33.3		27,304	6.00	28.8		20,478						
9.0	9.0		21.7	30,717	6.75		18.7	23,038	9.0	10.8	30,717	8.28	10.4	28,260
10.0	10.0	41.7		34,130	7.50	36.1		25,598						
15.0	15.0	62.5	36.1	51,195	11.25	54.1	31.2	38,396	15.0	18.0	51,195	13.80	17.3	47,099
18.0	18.0		43.3	61,434	13.50		37.5	46,076	18.0	21.7	61,434	16.56	20.8	56,519
20.0	20.0	83.3		68,260	15.00	72.1		51,195						

(1) These electric heaters are available in 230/208V units only.

(2) These electric heaters are available in 480V units only.

Heater Packages - Field Installed

- Designed for adding Electric Heat to 0 KW Units
- Circuit Breaker Standard on 230/208V Models
- Toggle Disconnect Standard on 460V Models
- UL Listed
- CUL Listed

Air Conditioner Models	-A00 Models 230/208-1		-B00 Models 230/208-3		-C00 Models 460-3	
	Heater Model #	KW	Heater Model #	KW	Heater Model #	KW
WA182	EHWA02-A05 EHWA02A-A08 EHWA02A-A10	5 8 10	N/A		N/A	
WA242 WA253	EHWA02-A05 EHWA02A-A08 EHWA02A-A10	5 8 10	EHWA24-B06	6	EHWH24B-C06①	6
WA302	EHWA03-A05 EHWA03-A08 EHWA03-A10 EHWA03-A15	5 8 10 15	EHWA03-B06 EHWA03-B09 EHWA03-B15	6 9 15	EHWC03A-C06 EHWC03A-C09 EHWA03A-C15	6 9 15
WA372	EHWA03-A05 EHWA03-A08 EHWA03-A10 EHWA03-A15	5 8 10 15	EHWA03-B06 EHWA03-B09 EHWA37-B15	6 9 15	EHWC03A-C06 EHWC03A-C09 EHWA03A-C15	6 9 15
WA423 WA484	EHWA05-A05 EHWA05-A10 EHWA05-A15 EHWA05-A20	5 10 15 20	EHWA05-B09 EHWA05-B15 EHWA05-B18	9 15 18	EHWA05A-C09 EHWA05A-C15	9 15
WA602	EHWA60-A05 EHWA05-A10 EHWA05-A15 EHWA05-A20	5 10 15 20	EHWA60-B09 EHWA05-B15 EHWA05-B18	9 15 18	EHWA05A-C09 EHWA05A-C15	9 15

NOTE: Field installed Heater Packages are not approved for use with top supply opening models.

① Model WA242 only.

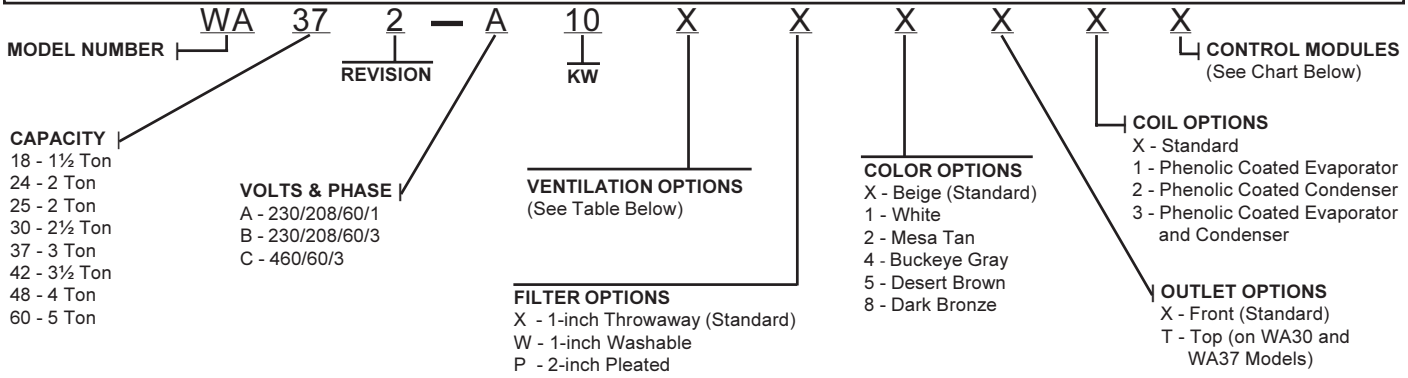
Cooling Application Data - Outdoor Temperature ①

Model	D.B./W.B. ②	Cooling Capacity	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F	120°F	125°F
WA182	75/62	Total Cooling	19,600	18,675	17,725	16,825	15,925	15,050	14,175	13,325	12,500	11,700	11,100
		Sensible Cooling	14,825	14,700	14,475	14,190	13,830	13,390	12,880	12,300	11,640	10,700	10,150
	80/67	Total Cooling	20,975	20,360	19,710	19,020	18,300	17,540	16,750	15,920	15,060	14,400	13,800
		Sensible Cooling	14,625	14,465	14,300	14,135	13,970	13,640	13,230	12,720	12,125	11,600	11,000
	85/72	Total Cooling	24,950	23,780	22,620	21,460	20,315	19,180	18,050	16,930	15,815	14,700	13,600
		Sensible Cooling	14,750	14,620	14,400	14,090	13,690	13,190	12,610	11,930	11,155	10,400	9,650
WA242	75/62	Total Cooling	24,900	23,880	22,870	21,670	20,880	19,900	18,920	17,960	17,000	16,050	15,050
		Sensible Cooling	19,900	19,530	19,140	18,720	18,275	17,800	17,300	16,770	16,215	15,300	14,300
	80/67	Total Cooling	26,600	26,040	25,420	24,740	24,000	23,210	22,350	21,450	20,480	19,000	17,550
		Sensible Cooling	19,300	19,160	18,970	18,740	18,460	18,140	17,770	17,350	16,890	15,700	14,400
	85/72	Total Cooling	31,300	30,350	29,260	28,020	26,640	25,110	23,440	21,620	20,600	19,475	18,400
		Sensible Cooling	19,775	19,430	19,040	18,590	18,090	17,530	16,920	16,260	15,540	14,700	13,900
WA253	75/62	Total Cooling	23,400	22,600	21,800	21,000	20,100	19,200	18,300	17,400	16,400	15,400	14,300
		Sensible Cooling	19,100	18,700	18,400	17,900	17,600	17,100	16,600	16,200	15,600	15,100	14,600
	80/67	Total Cooling	24,900	24,600	24,200	23,700	23,000	22,300	21,500	20,700	19,700	18,600	17,400
		Sensible Cooling	18,500	18,300	18,200	17,900	17,700	17,400	17,000	16,700	16,200	15,800	15,300
	85/72	Total Cooling	29,700	28,800	27,800	26,800	25,600	24,400	23,200	22,100	20,700	19,400	17,900
		Sensible Cooling	19,000	18,600	18,300	17,800	17,400	16,900	16,200	15,700	15,000	14,300	13,600
WA302	75/62	Total Cooling	30,900	29,700	28,500	27,400	26,100	25,100	24,000	22,900	21,900	20,800	19,700
		Sensible Cooling	25,700	25,300	24,900	24,400	23,900	23,300	22,700	22,200	21,500	20,800	20,100
	80/67	Total Cooling	33,000	32,300	31,600	30,900	30,000	29,200	28,300	27,300	26,300	25,200	24,000
		Sensible Cooling	24,900	24,800	24,600	24,400	24,100	23,700	23,300	22,900	22,300	21,700	21,100
	85/72	Total Cooling	39,300	37,800	36,300	34,900	33,400	32,000	30,500	29,100	27,700	26,200	24,700
		Sensible Cooling	25,500	25,200	24,700	24,300	23,700	23,000	22,200	21,500	20,600	19,600	18,700
WA372	75/62	Total Cooling	37,300	35,700	34,200	32,800	31,400	30,100	28,900	27,800	26,700	25,700	24,600
		Sensible Cooling	28,100	27,700	27,300	26,800	26,400	25,800	25,200	24,500	23,800	22,900	22,100
	80/67	Total Cooling	39,800	38,900	38,000	37,000	36,000	35,100	34,100	33,100	32,100	31,100	30,000
		Sensible Cooling	27,200	27,100	27,000	26,800	26,600	26,200	25,800	25,300	24,700	24,000	23,200
	85/72	Total Cooling	47,400	45,500	43,700	41,800	40,000	38,400	36,800	35,200	33,800	32,300	30,900
		Sensible Cooling	27,900	27,500	27,200	26,600	26,100	25,400	24,600	23,700	22,800	21,700	20,600
WA423	75/62	Total Cooling	43,200	41,700	40,100	38,400	36,600	34,800	33,000	31,000	29,000	26,900	24,700
		Sensible Cooling	35,000	34,300	33,500	32,800	32,000	31,200	30,200	29,300	28,300	27,200	26,100
	80/67	Total Cooling	46,100	45,400	44,500	43,400	42,000	40,500	38,900	37,000	34,900	32,600	30,100
		Sensible Cooling	33,900	33,600	33,200	32,800	32,300	31,700	31,000	30,300	29,400	28,500	27,500
	85/72	Total Cooling	54,900	53,100	51,100	49,000	46,700	44,300	42,000	39,400	36,700	33,900	31,000
		Sensible Cooling	34,700	34,100	33,400	32,600	31,700	30,700	29,600	28,400	27,100	25,800	24,400
WA484	75/62	Total Cooling	48,200	46,300	44,650	43,070	41,300	39,340	37,190	34,840	32,300	30,900	29,500
		Sensible Cooling	39,120	38,520	37,680	37,510	37,000	36,130	34,910	33,330	31,400	30,000	28,700
	80/67	Total Cooling	51,440	50,440	49,640	48,750	47,500	45,890	43,920	41,590	38,900	38,100	37,250
		Sensible Cooling	37,950	37,800	37,600	37,400	37,300	36,740	35,800	34,490	32,800	32,050	31,350
	85/72	Total Cooling	59,900	58,650	57,240	55,350	52,700	49,700	46,700	43,800	40,850	39,100	37,450
		Sensible Cooling	38,750	38,250	37,450	37,230	36,600	35,570	34,150	32,320	30,100	28,700	27,500
WA602	75/62	Total Cooling	60,350	57,500	54,630	52,320	50,000	47,660	45,290	42,910	40,500	N/A	N/A
		Sensible Cooling	45,170	43,700	42,180	41,110	40,000	38,840	37,640	36,390	35,100	N/A	N/A
	80/67	Total Cooling	64,600	62,750	60,690	59,190	57,500	55,610	53,540	51,260	48,800	N/A	N/A
		Sensible Cooling	43,950	42,960	41,830	41,150	40,400	39,570	38,660	37,670	36,600	N/A	N/A
	85/72	Total Cooling	76,800	73,300	69,610	66,740	63,800	60,780	57,700	54,530	51,300	N/A	N/A
		Sensible Cooling	44,900	43,470	41,970	40,840	39,600	38,260	36,810	35,260	33,600	N/A	N/A

① Below 65°F (18.3C), unit requires a factory or field installed low ambient control.
② Return air temperature.

Capacity Multiplier Factors			
% of Rated Airflow	-10	Rated	+10
Total BTUH	0.975	1.0	1.02
Sensible BTUH	0.950	1.0	1.05

Air Conditioning Wall-Mount Model Nomenclature



Note: For 0KW and circuit breakers (230/208 Volt) or toggle disconnects (460 Volt) applications, insert 0Z in the KW field of the model number.

Ventilation Options

Models	WA182, WA242, WA253		WA302, WA372		WA423, WA484, WA602	
Description	Factory Installed Code No.	Field Installed Part No.	Factory Installed Code No.	Field Installed Part No.	Factory Installed Code No.	Field Installed Part No.
Barometric Fresh Air Damper - Standard	X	BFAD-2	X	BFAD-3	X	BFAD-5
Blank-Off Plate	B	BOP-2	B	BOP-3	B	BOP-5
Motorized Fresh Air Damper	M	MFAD-2	M	MFAD-3	M	MFAD-5
Commercial Ventilator - Spring Return w/Exhaust	V	CRV-2	V	CRVS-3	V	CRVS-5
Commercial Ventilator - Power Return w/Exhaust	---	---	P	CRVP-3	P	CRVP-5
Economizer - Fully Modulating ①	E	EIFM-2B	E	EIFM-3C	E	EIFM-5C
Economizer - Fully Modulating ①②	D	N/A	D	N/A	D	N/A
Energy Recovery Ventilator - 230 Volt	R	WERV-A2B	R	WERV-A3C ③	R	WERV-A5C ③
Energy Recovery Ventilator - 460 Volt	N/A	N/A	R	WERV-C3C ③	R	WERV-C5C ③

① Low ambient control is required with economizer for low temperature compressor operation.
② For use only with "V" Control Module and TCS22 Controller.
③ Intake and exhaust can be independently adjusted.

Air Conditioning Control Modules

AVAILABLE CONTROL OPTIONS									WA182, WA242, WA302, WA372, WA423 Models	
TDR ①	HPC ②	LPC ③	CCM ④	LAC ⑤	ALR ⑥	SK ⑦	ODT ⑧	DDC ⑨	Factory Installed Code	Field Installed Part
●									D	CMA-5
				●					E	CMA-6
	●	●	●						G	CMA-10A
	●	●	●	●					H	CMA-13A
●				●					I	CMA-12
	●	●	●	●	●				J	Factory Only
	●	●	●	●		●			K	CMA-13A & CMC-15
	●	●	●	●	●	●			M	Factory Only
						●			Field Installed Only	CMC-15
							●		Field Installed Only	CMA-14
	●	●	●	●	●			●	V ⑩	Factory Only
								●	Field Installed Only	CMA-23 ■

Air Conditioning Control Modules

AVAILABLE CONTROL OPTIONS									WA253, WA484, WA602 Models	
TDR ①	HPC②	LPC ③	CCM ④	LAC ⑤	ALR ⑥	SK ⑦	ODT ⑧	DDC ⑨	Factory Installed Code	Field Installed Part
Does Not Apply To These Models	STD	●	STD						G	CMA-16A
	STD	●	STD	●					H	CMA-18A
	STD		STD	●					I	CMA-6
	STD	●	STD	●	●				J	Factory Only
	STD	●	STD	●		●			K	CMA-13A & CMC-15
	STD	●	STD	●	●	●			M	Factory Only
	STD		STD			●			Field Installed Only	CMC-15
	STD		STD				●		Field Installed Only	CMA-14
	STD	●	STD	●	●			●	V ⑩	Factory Only
	STD		STD					●	Field Installed Only	CMA-24 ▲

STD = Standard equipment for these specified models.
① TDR. Time delay relay only for compressor is fixed 5-minute delay-on-break to prevent short cycling. Not needed if HPC or LPC are used. See notes ②, ③ and ④.
② HPC. High pressure control is auto reset. Always used with compressor control module (CCM) which is included. See note ④.
③ LPC. Low pressure control is auto reset. Always used with compressor control module (CCM) which is included. See note ④.
④ CCM. Compressor control module has adjustable 30-second to 5-minute delay-on-break timer. On initial power-up, or any time the power is interrupted, the delay-on-make will be 2-minutes plus 10% of the delay-on-break setting. There is no delay-on-make during routine operation of the unit. The module also provides the lockout feature (with 1 retry) for high and/or low-pressure controls, and a 2-minute timed bypass for low-pressure control.
⑤ LAC. Low ambient control permits cooling operation down to 0°F
⑥ ALR. The alarm relay has a set of normally open and normally closed dry contacts to provide the ability to signal a condition of shutdown on either high or low pressure controls.
⑦ SK. Start kit can be used with all -A single phase models only. Is not used or available for -B or -C three phase models.
⑧ ODT. Outdoor thermostat is adjustable from 0 to 50°F. It is suitable for use as a compressor cut-off thermostat.
⑨ DDC. Incorporates 4 additional sensors: discharge air temperature, indoor blower airflow, compressor current, and dirty filter. These sensing devices function to input analog data such as temperature, as well as digital data such as airflow, compressor status or filter status.
⑩ "V" control module should be ordered in conjunction with direct digital controller (DDC) model TCS22. Refer to DDC specification sheet S3280 for more information.
■ Use CMA-24 for Model WA423. ▲ Use CMA-23 for Models WA253.

INSTALLATION INSTRUCTIONS

WALL MOUNTED
PACKAGE AIR CONDITIONERS

MODELS
WA381
WA423
WA484
WA491
WA602

CLIMATE CONTROL SOLUTIONS

Bard Manufacturing Company, Inc.
Bryan, Ohio 43506

Since 1914...Moving ahead just as planned.

Manual :	2100-398C
Supersedes:	2100-398B
File:	Volume III Tab 16
Date:	08-01-07

Contents

GETTING OTHER INFORMATION AND PUBLICATIONS

These publications can help you install the air conditioner or heat pump. You can usually find these at your local library or purchase them directly from the publisher. Be sure to consult current edition of each standard.

National Electrical Code ..... ANSI/NFPA 70

Standard for the Installation ..... ANSI/NFPA 90A of Air Conditioning and Ventilating Systems

Standard for Warm Air ..... ANSI/NFPA 90B Heating and Air Conditioning Systems

Load Calculation for ..... ACCA Manual J Residential Winter and Summer Air Conditioning

Duct Design for Residential ..... ACCA Manual D Winter and Summer Air Conditioning and Equipment Selection

FOR MORE INFORMATION, CONTACT THESE PUBLISHERS:

ACCA **Air Conditioning Contractors of America**
1712 New Hampshire Ave. N.W.
Washington, DC 20009
Telephone: (202) 483-9370
Fax: (202) 234-4721

ANSI **American National Standards Institute**
11 West Street, 13th Floor
New York, NY 10036
Telephone: (212) 642-4900
Fax: (212) 302-1286

ASHRAE **American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc.**
1791 Tullie Circle, N.E.
Atlanta, GA 30329-2305
Telephone: (404) 636-8400
Fax: (404) 321-5478

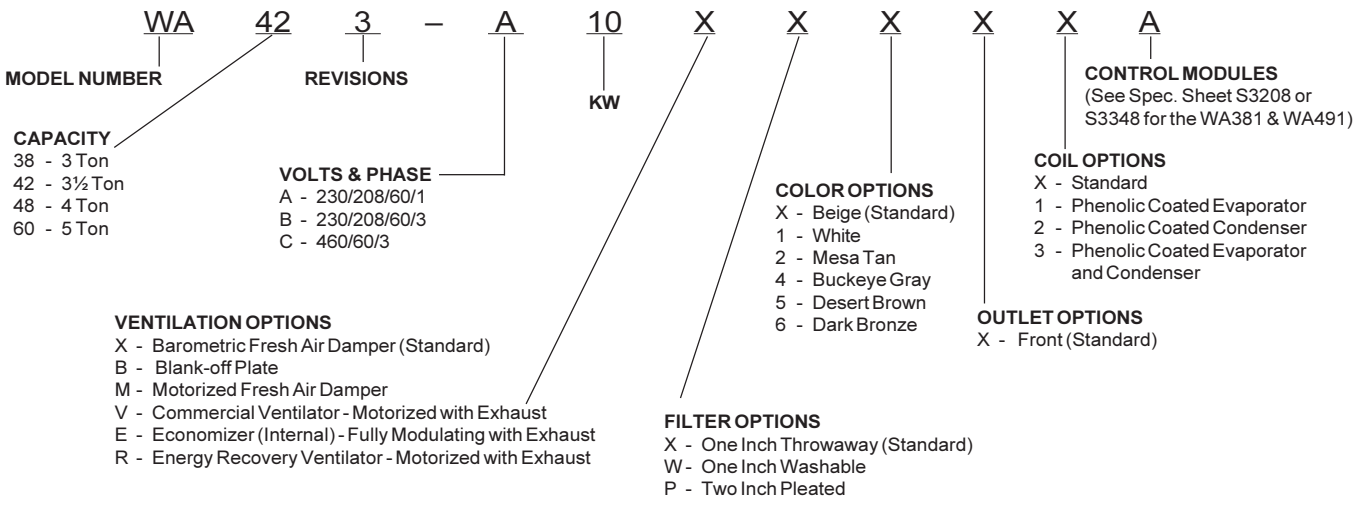
NFPA **National Fire Protection Association**
Batterymarch Park
P.O. Box 9101
Quincy, MA 02269-9901
Telephone: (800) 344-3555
Fax: (617) 984-7057

Manufactured under the following U.S. Patent numbers:

5,485,878; 5,301,777; 5,002,116; 4,924,934; 4,875,520; 4,825,936

WALL MOUNT GENERAL INFORMATION

AIR CONDITIONER WALL MOUNT MODEL NOMENCLATURE



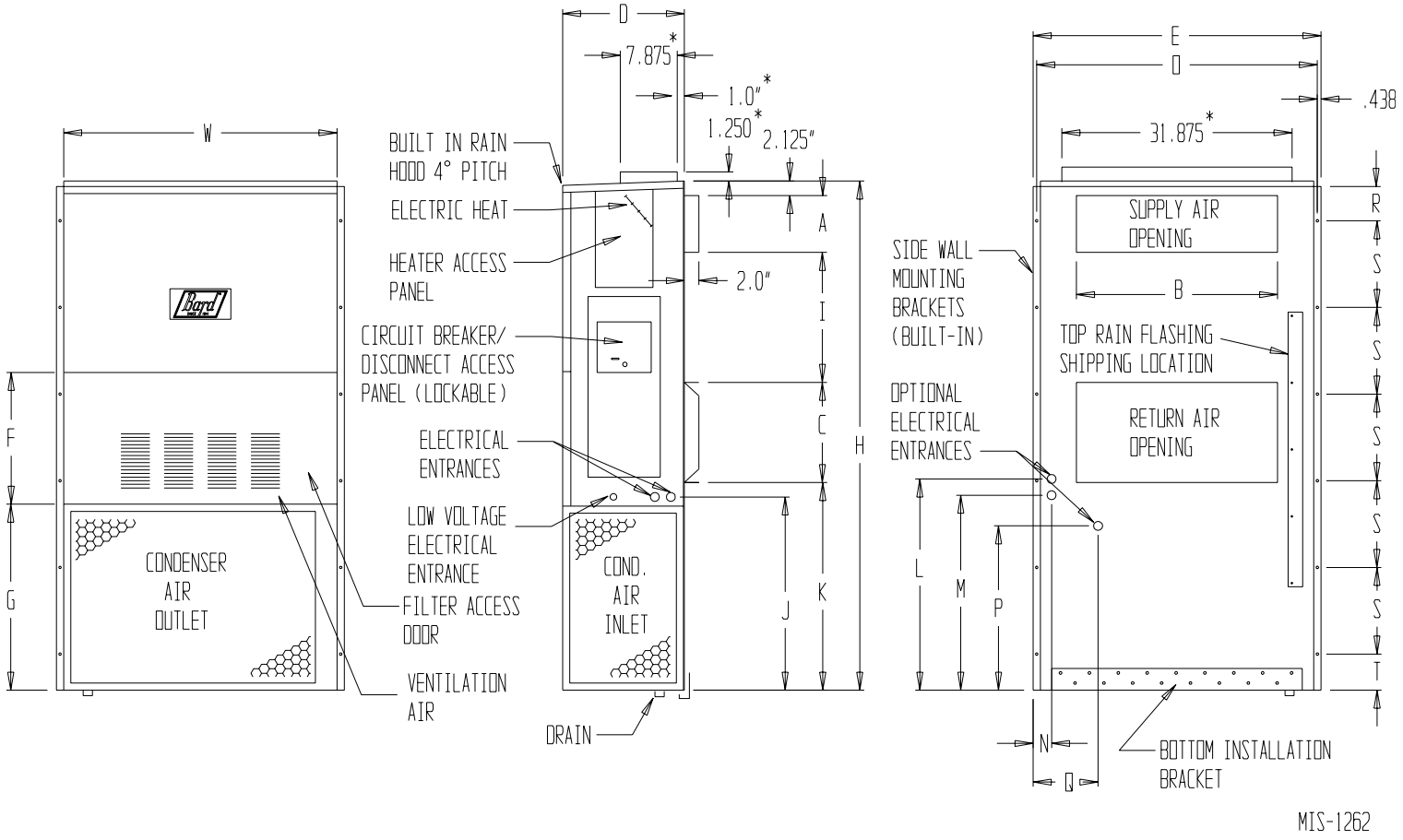
NOTE: All vent options are without exhaust capability. May require separate field supplied barometric relief in building.

TABLE 1
ELECTRIC HEAT TABLE

Models	WA381-A WA423-A WA484-A WA491-A WA602-A				WA381-B WA423-B WA484-B WA491-B WA602-B				WA381-C WA423-C WA484-C WA491-C WA602-C	
	230-1		208-1		230-3		208-3		460-3	
KW	A	BTU	A	BTU	A	BTU	A	BTU	A	BTU
5	20.8	17050	18.1	12800	- - -	- - -	- - -	- - -	- - -	- - -
6	- - -	- - -	- - -	- - -	14.4	20500	12.5	15360	7.2	20480
8	33.3	27280	28.8	20450	- - -	- - -	- - -	- - -	- - -	- - -
9	- - -	- - -	- - -	- - -	21.7	30600	18.7	23030	10.8	30700
10	41.6	34130	36.2	25600	- - -	- - -	- - -	- - -	- - -	- - -
15	62.5	51200	54.0	38400	36.2	51200	31.2	38400	17.3	47000
18	- - -	- - -	- - -	- - -	43.3	61430	37.5	46100	- - -	- - -
20	83.2	68260	72.1	51200	- - -	- - -	- - -	- - -	- - -	- - -

FIGURE 1
UNIT DIMENSIONS

Model	Width (W)	Depth (D)	Height (H)	Supply		Return		E	F	G	I	J	K	L	M	N	O	P	Q	R	S	T
				A	B	C	B															
WA38 WA42 WA48 WA49 WA60	42.075	22.432	84.875	9.88	29.88	15.88	29.88	43.88	19.10	31.66	30.00	32.68	26.94	34.69	32.43	3.37	42.88	23.88	10.00	1.44	16.00	1.88



FRONT VIEW **SIDE VIEW** **BACK VIEW**

TABLE 2
ELECTRICAL SPECIFICATIONS

Model	SINGLE CIRCUIT						DUAL CIRCUIT							
	Rated Volts & Phase	No. Field Power Circuits	③ Minimum Circuit Ampacity	① Maximum External Fuse or Circuit Breaker	② Field Power Wire Size	② Ground Wire Size	③ Minimum Circuit Ampacity		① Maximum External Fuse or Circuit Breaker		② Field Power Wire Size		② Ground Wire Size	
							CKT A	CKT B	CKT A	CKT B	CKT A	CKT B	CKT A	CKT B
WA381-A00, A0Z	230/208-1	1	25	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A05		1	32	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A08		1	47	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A10		1	58	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA381-B00, B0Z	230/208-3	1	20	30	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B06		1	24	30	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B09		1	33	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA381-C00, C0Z	460-3	1	11	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C06		1	13	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C09		1	17	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA423-A00, A0Z	230/208-1	1	35	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A05		1	35	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A10		1	59	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A15		1 or 2	85	90	4	8	56	26	60	30	6	10	10	10
A20		1 or 2	110	110	2	6	56	52	60	60	6	6	10	10
WA423-B00, B0Z	230/208-3	1	24	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B09		1	34	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B15		1	52	50	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B18		1	60	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA423-C00, C0Z	460-3	1	13	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C09		1	17	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C15		1	26	30	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA484-A00, A0Z	230/208-1	1	36	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A05		1	36	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A10		1	59	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A15		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
A20		1 or 2	110	110	2	6	59	52	60	60	6	6	10	10
WA484-B00, B0Z	230/208-3	1	25	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B09		1	34	35	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B15		1	52	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B18		1	60	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA484-C00, C0Z	460-3	1	13	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C09		1	17	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C15		1	26	30	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA491-A00, A0Z	230/208-1	1	33	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A05		1	33	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A08		1	47	50	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A10		1	58	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA491-B00, B0Z	230/208-3	1	27	40	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B06		1	27	40	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B09		1	33	40	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA491-C00, C0Z	460-3	1	13	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C06		1	13	15	14	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C10		1	17	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TABLE CONTINUED ON PAGE 7

① Maximum size of the time delay fuse or HACR type circuit breaker for protection of field wiring conductors.

② Based on 75° C copper wire. All wiring must conform to NEC and all local codes.

③ These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electric Code (latest revision), article 310 for power conductor sizing.

CAUTION: *When more than one field power conductor circuit is run through one conduit, the conductors must be derated. Pay special attention to note 8 of table 310 regarding Ampacity Adjustment Factors when more than 3 conductors are in a raceway.*

TABLE CONTINUED FROM PAGE 6

Model	SINGLE CIRCUIT						DUAL CIRCUIT							
	Rated Volts & Phase	No. Field Power Circuits	③ Minimum Circuit Ampacity	① Maximum External Fuse or Circuit Breaker	② Field Power Wire Size	② Ground Wire Size	③ Minimum Circuit Ampacity		① Maximum External Fuse or Circuit Breaker		② Field Power Wire Size		② Ground Wire Size	
							CKT A	CKT B	CKT A	CKT B	CKT A	CKT B	CKT A	CKT B
WA602-A00, A0Z	230/208-1	1	44	60	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A05		1	44	60	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A10		1	55	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A15		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
A20		1 or 2	110	110	2	6	59	52	60	60	6	6	10	10
WA602-B00, B0Z	230/208-3	1	32	45	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B09		1	34	45	8	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B15		1	52	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B18		1	60	60	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WA602-C00, C0Z	460-3	1	16	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C09		1	17	20	12	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C15		1	26	30	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

① Maximum size of the time delay fuse or HACR type circuit breaker for protection of field wiring conductors.

② Based on 75° C copper wire. All wiring must conform to NEC and all local codes.

③ These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electric Code (latest revision), article 310 for power conductor sizing.

CAUTION: *When more than one field power conductor circuit is run through one conduit, the conductors must be derated. Pay special attention to note 8 of table 310 regarding Ampacity Adjustment Factors when more than 3 conductors are in a raceway.*

SHIPPING DAMAGE

Upon receipt of equipment, the carton should be checked for external signs of shipping damage. If damage is found, the receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier's agent.

GENERAL

The equipment covered in this manual is to be installed by trained, experienced service and installation technicians.

The refrigerant system is completely assembled and charged. All internal wiring is complete.

The unit is designed for use with or without duct work. Flanges are provided for attaching the supply and return ducts.

These instructions explain the recommended method to install the air cooled self-contained unit and the electrical wiring connections to the unit.

These instructions and any instructions packaged with any separate equipment required to make up the entire air conditioning system should be carefully read before beginning the installation. Note particularly "Starting Procedure" and any tags and/or labels attached to the equipment.

While these instructions are intended as a general recommended guide, they do not supersede any national and/or local codes in any way. Authorities having jurisdiction should be consulted before the installation is made. See Page 3 for information on codes and standards.

Size of unit for a proposed installation should be based on heat loss calculation made according to methods of Air Conditioning Contractors of America (ACCA). The air duct should be installed in accordance with the Standards of the National Fire Protection Association for the Installation of Air Conditioning and Ventilating Systems of Other Than Residence Type, NFPA No. 90A, and Residence Type Warm Air Heating and Air Conditioning Systems, NFPA No. 90B. Where local regulations are at a variance with instructions, installer should adhere to local codes.

DUCT WORK

All duct work, supply and return, must be properly sized for the design air flow requirement of the equipment. Air Conditioning Contractors of America (ACCA) is an excellent guide to proper sizing. All duct work or portions thereof not in the conditioned space should be properly insulated in order to both conserve energy and prevent condensation or moisture damage.

Refer to Table 9 & 9A for maximum static pressure available for duct design.

Design the duct work according to methods given by the Air Conditioning Contractors of America (ACCA). When duct runs through unheated spaces, it should be insulated with a minimum of one inch of insulation. Use insulation with a vapor barrier on the outside of the insulation. Flexible joints should be used to connect the duct work to the equipment in order to keep the noise transmission to a minimum.

A 1/4 inch clearance to combustible material for the first three feet of duct attached to the outlet air frame is required. See Wall Mounting Instructions and Figures 3 and 4 for further details.

Ducts through the walls must be insulated and all joints taped or sealed to prevent air or moisture entering the wall cavity.

Some installations may not require any return air duct. A metallic return air grille is required with installations not requiring a return air duct. The spacing between louvers on the grille shall not be larger than 5/8 inch.

Any grille that meets with 5/8 inch louver criteria may be used. It is recommended that Bard Return Air Grille Kit RG2 through RG5 or RFG2 through RFG5 be installed when no return duct is used. Contact distributor or factory for ordering information. If using a return air filter grille, filters must be of sufficient size to allow a maximum velocity of 400 fpm.

NOTE: If no return air duct is used, applicable installation codes may limit this cabinet to installation only in a single story structure.

FILTERS

A 1-inch throwaway filter is supplied with each unit. The filter slides into position making it easy to service. This filter can be serviced from the outside by removing the service door. A 1-inch washable filter and 2-inch pleated filter are also available as optional accessories. The internal filter brackets are adjustable to accommodate the 2-inch filter by loosening two (2) screws on each bracket assembly and sliding the brackets apart to the required width and retightening the four (4) screws.

FRESH AIR INTAKE

All units are built with fresh air inlet slots punched in the service panel.

If the unit is equipped with a fresh air damper assembly, the assembly is shipped already attached to the unit. The damper blade is locked in the closed position. To allow the damper to operate, the maximum and minimum blade position stops must be installed. See Figure 2.

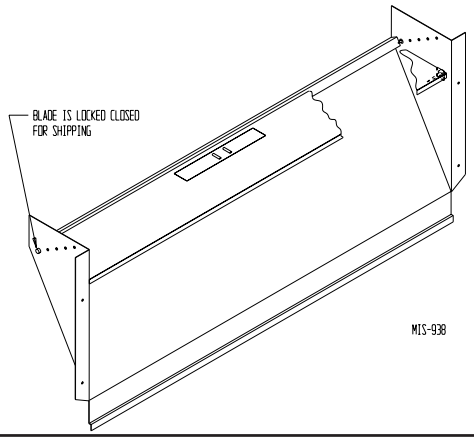
All capacity, efficiency and cost of operation information as required for Department of Energy "Energyguide" Fact Sheets is based upon the fresh air blank-off plate in place and is recommended for maximum energy efficiency.

The blank-off plate is available upon request from the factory and is installed in place of the fresh air damper shipped with each unit.

CONDENSATE DRAIN

A plastic drain hose extends from the drain pan at the top of the unit down to the unit base. There are openings in the unit base for the drain hose to pass through. In the event the drain hose is connected to a drain system of some type, it must be an open or vented type system to assure proper drainage.

FIGURE 2
FRESH AIR DAMPER



WALL MOUNTING INFORMATION

1. Two holes for the supply and return air openings must be cut through the wall as shown in Figure 3.
2. On wood frame walls, the wall construction must be strong and rigid enough to carry the weight of the unit without transmitting any unit vibration.
3. Concrete block walls must be thoroughly inspected to insure that they are capable of carrying the weight of the installed unit.

MOUNTING THE UNIT

1. These units are secured by wall mounting brackets which secure the unit to the outside wall surface at both sides. A bottom mounting bracket is provided for ease of installation, but is not required.
2. The unit itself is suitable for 0 inch clearance, but the supply air duct flange and the first 3 feet of supply air duct require a minimum of 1/4 inch clearance to combustible material. If a combustible wall, use a minimum of 30½" x 10½" dimensions for sizing. However, it is generally recommended that a 1-inch clearance is used for ease of installation and maintaining the required clearance to combustible material. The supply air opening would then be 32" x 12". See Figures 3 and 4 for details.
3. Locate and mark lag bolt locations and bottom mounting bracket location. See Figure 3.

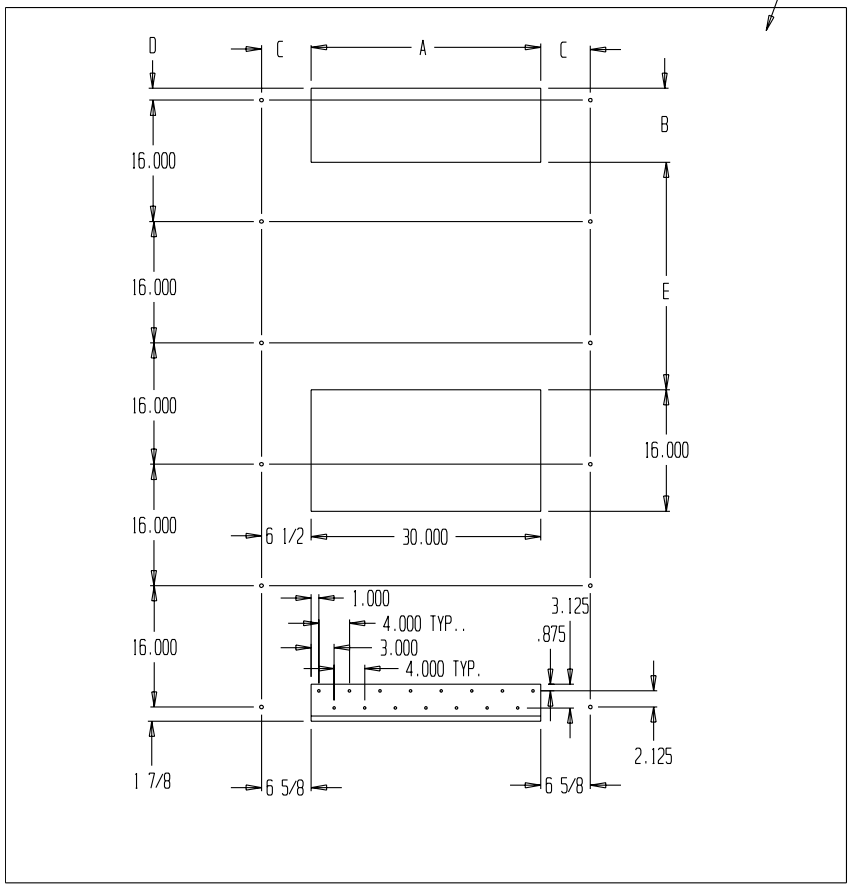
⚠ WARNING

Failure to provide the 1/4 inch clearance between the supply duct and a combustible surface for the first 3 feet of duct can result in fire causing damage, injury or death.

4. Mount bottom mounting bracket.
5. Hook top rain flashing under back bend of top. Top rain flashing is shipped secured to the right side of the back.
6. Position unit in opening and secure with 5/16 lag bolts; use 7/8 inch diameter flat washers on the lag bolts.
7. Secure rain flashing to wall and caulk across entire length of top. See Figure 3.
8. For additional mounting rigidity, the return air and supply air frames or collars can be drilled and screwed or welded to the structural wall itself (depending upon wall construction). Be sure to observe required clearance if combustible wall.
9. On side-by-side installations, maintain a minimum of 20 inches clearance on right side to allow access to control panel and heat strips, and to allow proper airflow to the outdoor coil. Additional clearance may be required to meet local or national codes.

FIGURE 3
MOUNTING INSTRUCTIONS

	A	B	C	D	E
REQUIRED DIMENSIONS TO MAINTAIN 1/4" MIN. CLEARANCE FROM COMBUSTIBLE MATERIALS	30 1/2	10 1/2	6 1/4	1 1/4	29 3/4
REQUIRED DIMENSIONS TO MAINTAIN RECOMMENDED 1" CLEARANCE FROM COMBUSTIBLE MATERIALS	32	12	5 1/2	2	29



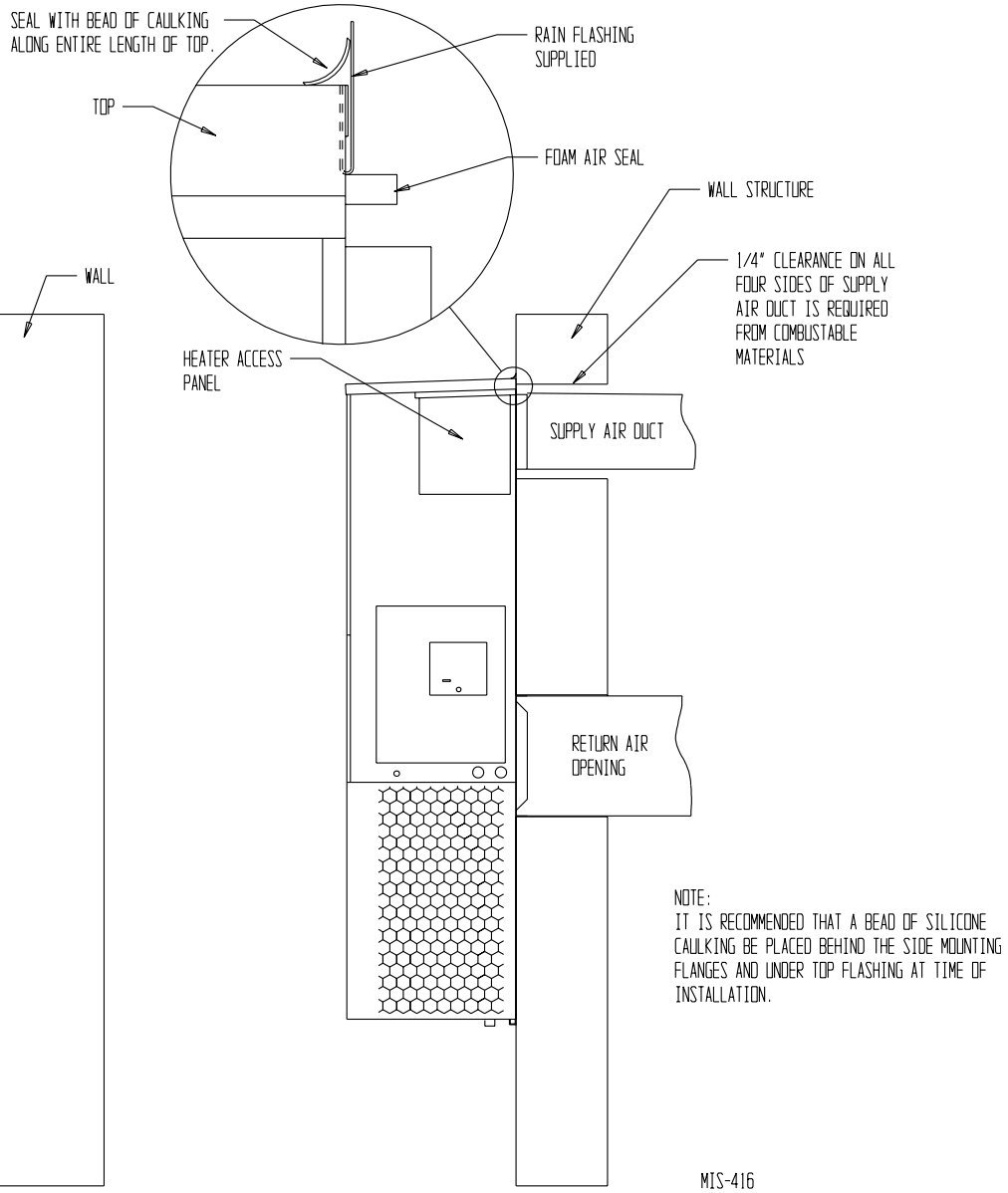
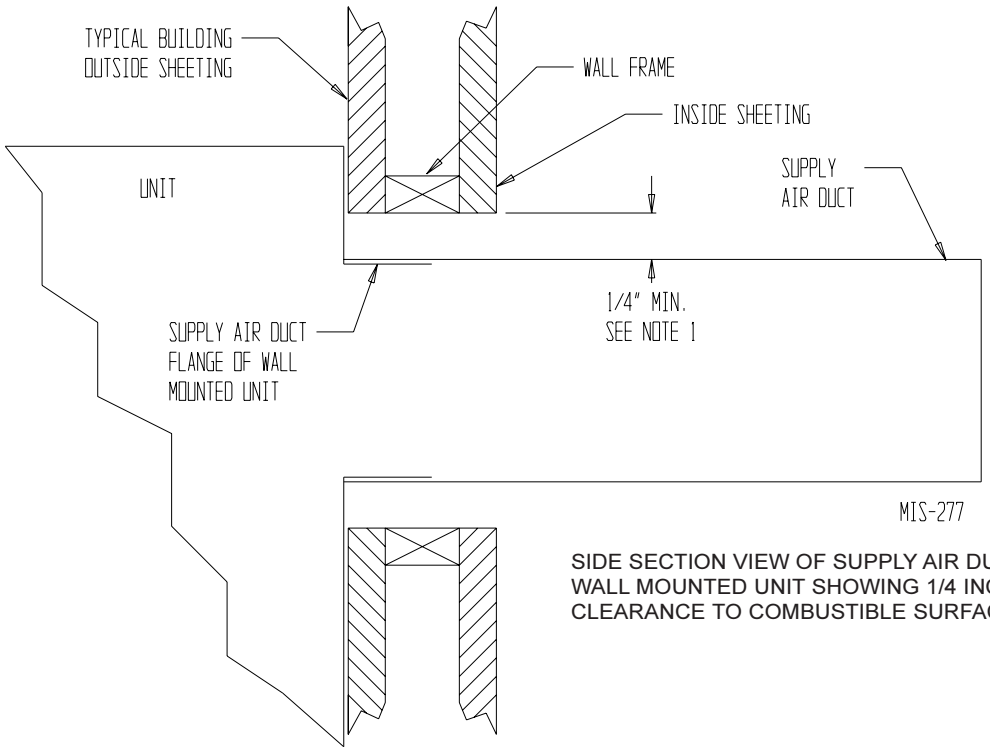


FIGURE 4
ELECTRIC HEAT CLEARANCE



SIDE SECTION VIEW OF SUPPLY AIR DUCT FOR WALL MOUNTED UNIT SHOWING 1/4 INCH CLEARANCE TO COMBUSTIBLE SURFACES.

⚠ WARNING

A ***minimum*** of 1/4 inch clearance must be maintained between the supply air duct and combustible materials. This is required for the first 3 feet of ducting.

It is important to insure that the 1/4 inch minimum spacing is maintained at all points.

Failure to do this could result in overheating the combustible material and may result in a fire causing damage, injury or death.

FIGURE 5
WALL MOUNTING INSTRUCTIONS

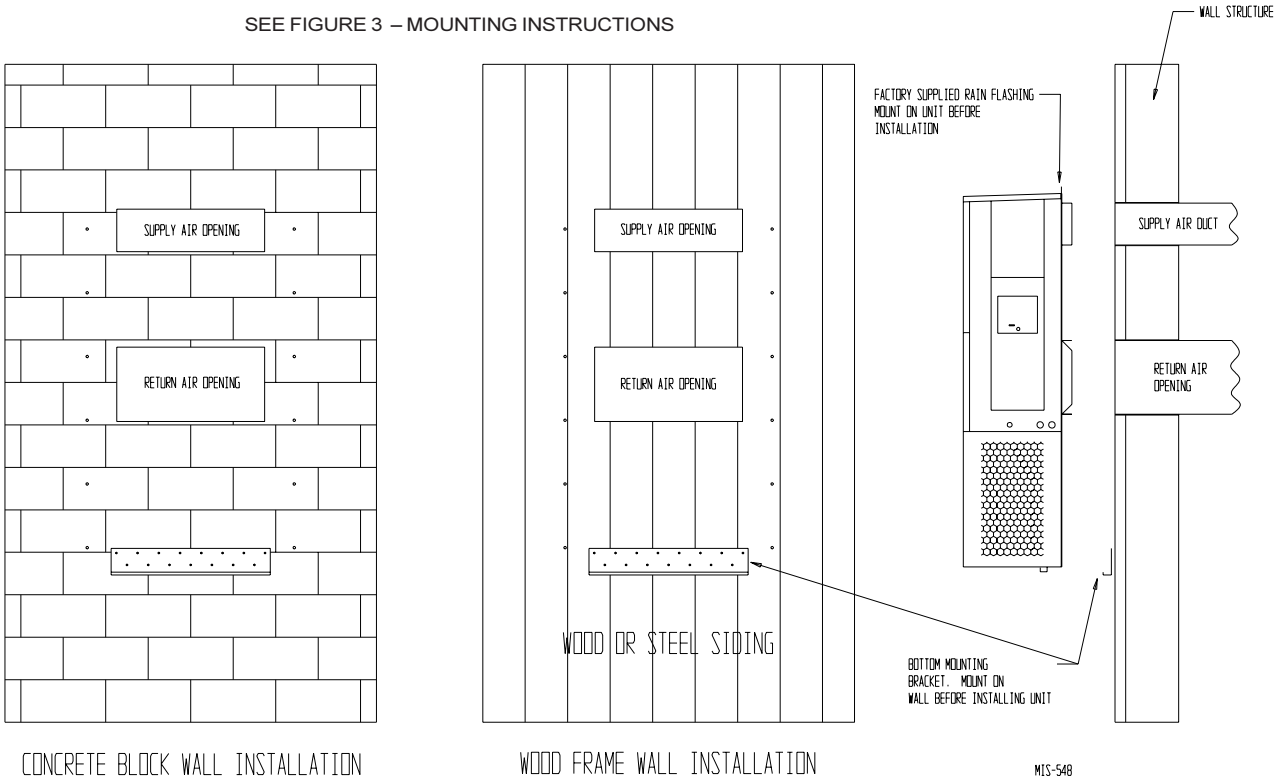


FIGURE 6
WALL MOUNTING INSTRUCTIONS

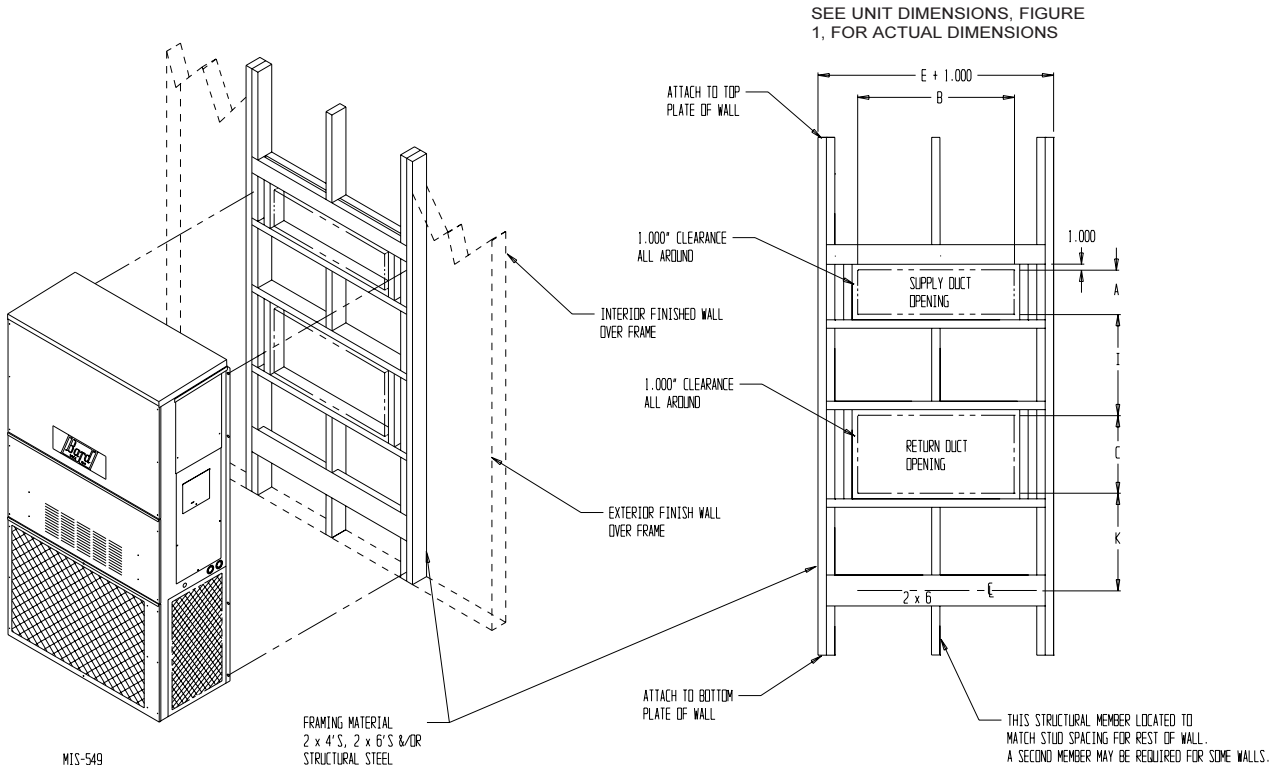
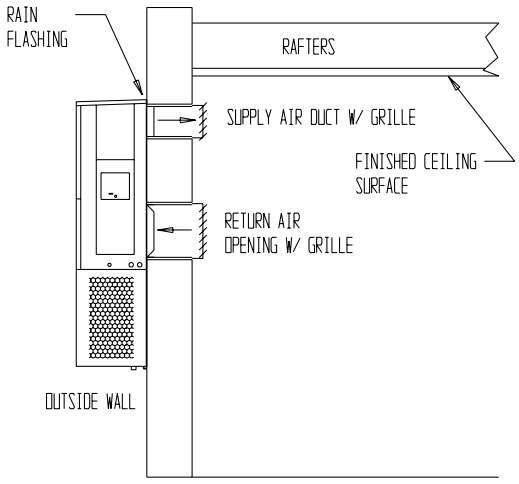
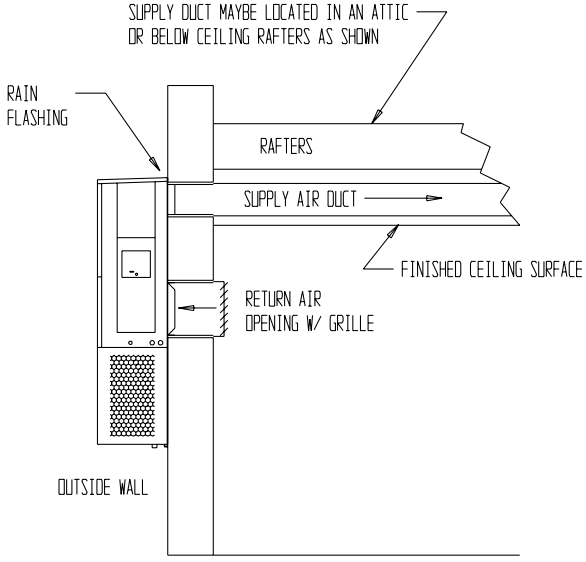


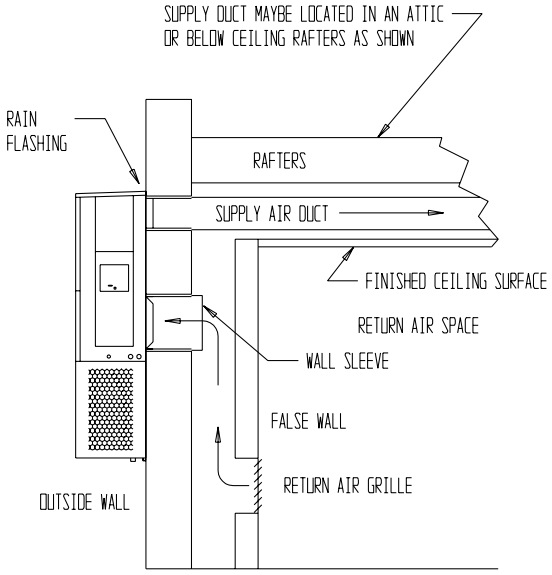
FIGURE 7
COMMON WALL MOUNTING INSTALLATIONS



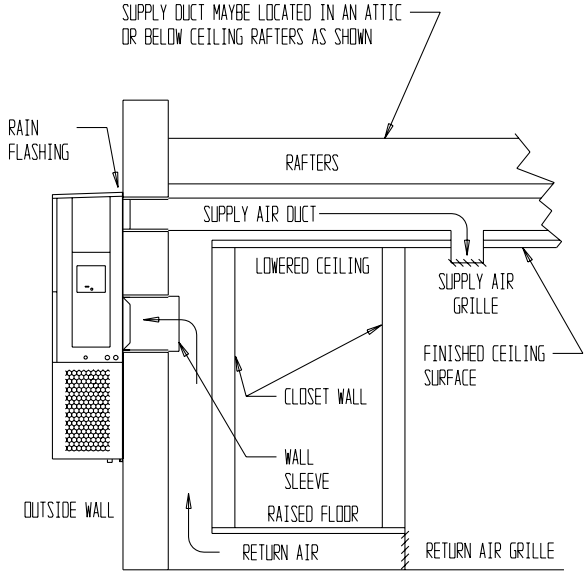
FREE AIR FLOW
NO DUCT



DUCTED SUPPLY
RETURN AT UNIT



FALSE WALL INSTALLATION



CLOSET INSTALLATION

MIS-550

WIRING – MAIN POWER

Refer to the unit rating plate for wire sizing information and maximum fuse or "HACR" type circuit breaker size. Each outdoor unit is marked with a "Minimum Circuit Ampacity". This means that the field wiring used must be sized to carry that amount of current. Depending on the installed KW of electric heat, there may be two field power circuits required. If this is the case, the unit serial plate will so indicate. All models are suitable only for connection with copper wire. Each unit and/or wiring diagram will be marked "Use Copper Conductors Only". These instructions ***must be*** adhered to. Refer to the National Electrical Code (NEC) for complete current carrying capacity data on the various insulation grades of wiring material. All wiring must conform to NEC and all local codes.

The electrical data lists fuse and wire sizes (75° C copper) for all models including the most commonly used heater sizes. Also shown are the number of field power circuits required for the various models with heaters.

The unit rating plate lists a "Maximum Time Delay Relay Fuse" or "HACR" type circuit breaker that is to be used with the equipment. The correct size must be used for proper circuit protection and also to assure that there will be no nuisance tripping due to the momentary high starting current of the compressor motor.

The disconnect access door on this unit may be locked to prevent unauthorized access to the disconnect. To convert for the locking capability, bend the tab located in the bottom left-hand corner of the disconnect opening under the disconnect access panel straight out. This tab will now line up with the slot in the door. When shut, a padlock may be placed through the hole in the tab preventing entry.

See "Start Up" section for important information on three phase scroll compressor start ups.

WIRING – LOW VOLTAGE WIRING

230/208V, 1 phase and 3 phase equipment dual primary voltage transformers. All equipment leaves the factory wired on 240V tap. For 208V operation, reconnect from 240V to 208V tap. The acceptable operating voltage range for the 240 and 208V taps are:

TAP	RANGE
240	253 – 216
208	220 – 187

NOTE: The voltage should be measured at the field power connection point in the unit and while the unit is operating at full load (maximum amperage operating condition).

Five (5) wires should be run from thermostat subbase to the 24V terminal board in the unit. A five conductor, 18 gauge copper, color-coded thermostat cable is recommended. The connection points are shown in Figure 8.

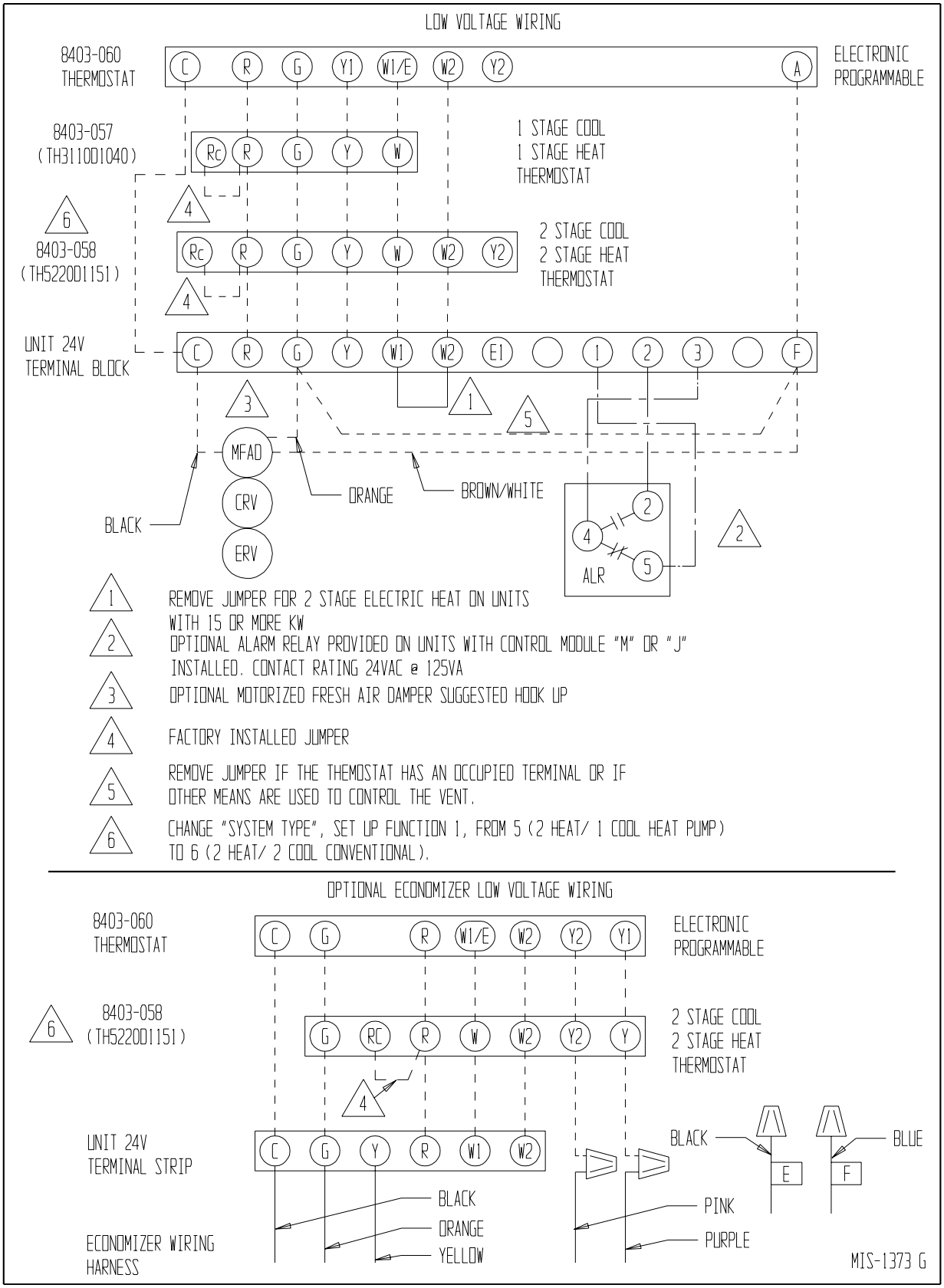
TABLE 3
THERMOSTAT WIRE SIZE

Transformer VA	FLA	Wire Gauge	Maximum Distance In Feet
55	2.3	20 gauge	45
		18 gauge	60
		16 gauge	100
		14 guage	160
		12 guage	250

TABLE 4
WALL THERMOSTAT

Thermostat	Predominate Features
8403-057 TH5220D1153	1 stage Cool, 1 stage Heat Electronic Non-Programmable Auto or Manual changeover
8403-058 TH5220D1151	2 stage Cool, 2 stage Heat Electronic Non-Programmable Auto or Manual changeover
8403-060 (1120-445)	3 stage Cool; 3 stage Heat Programmable/Non-Programmable Electronic HP or Conventional Auto or Manual changeover

FIGURE 8
UNIT 24V TERMINAL BOARD



START UP

IMPORTANT INSTALLER NOTE

For improved start up performance wash the indoor coil with a dish washing detergent.

HIGH PRESSURE SWITCH

The WA381, WA484, WA491 and WA602 models are supplied with a remote reset high pressure switch. If tripped, this pressure switch may be reset by turning the thermostat off then back on again.

THREE PHASE SCROLL COMPRESSOR START UP INFORMATION

Scroll compressors, like several other types of compressors, will only compress in one rotational direction. Direction of rotation is not an issue with single phase compressors since they will always start and run in the proper direction.

However, three phase compressors will rotate in either direction depending upon phasing of the power. Since there is a 50-50 chance of connecting power in such a way as to cause rotation in the reverse direction, verification of proper rotation must be made. Verification of proper rotation direction is made by observing that suction pressure drops and discharge pressure rises when the compressor is energized. Reverse rotation also results in an elevated sound level over that with correct rotation, as well as, substantially reduced current draw compared to tabulated values.

Verification of ***proper rotation*** must be made at the time the equipment is put into service. If improper rotation is corrected at this time, there will be no negative impact on the durability of the compressor. However, reverse operation for over one hour may have a negative impact on the bearing due to oil pump out.

NOTE: If compressor is allowed to run in reverse rotation for several minutes, the compressor's internal protector will trip.

All three phase ZR compressors are wired identically internally. As a result, once the correct phasing is determined for a specific system or installation, connecting properly phased power leads to the same Fusite terminal should maintain proper rotation direction.

The direction of rotation of the compressor may be changed by reversing any two line connections to the unit.

PHASE MONITOR

All units with three phase scroll compressors are equipped with a 3 phase line monitor to prevent compressor damage due to phase reversal.

The phase monitor in this unit is equipped with two LEDs. If the Y signal is present at the phase monitor and phases are correct the green LED will light.

If phases are reversed, the red fault LED will be lit and compressor operation is inhibited.

If a fault condition occurs, reverse two of the supply leads to the unit. Do not reverse any of the unit factory wires as damage may occur.

CONDENSER FAN OPERATION

The condenser fan motor on 230/208 volt, one and three phase, 60 HZ units is a two-speed motor that comes factory wired on high speed for peak performance. If ambient conditions permit, it can be reconnected to low speed (red wire) for lower sound level. See wiring diagram.

50 HZ models must have fan wired on low speed. These models are factory wired on low speed.

SERVICE HINTS

1. Caution homeowner to maintain clean air filters at all times. Also, not to needlessly close off supply and return air registers. This reduces airflow through the system, which shortens equipment service life as well as increasing operating costs.
2. Switching to heating cycle at 75° F or higher outside temperature may cause a nuisance trip of the remote reset high pressure switch. Turn thermostat off then on to reset the high pressure switch.
3. Check all power fuses or circuit breakers to be sure they are the correct rating.
4. Periodic cleaning of the outdoor coil to permit full and unrestricted airflow circulation is essential.

SEQUENCE OF OPERATION

COOLING – Circuit R-Y makes at thermostat pulling in compressor contactor, starting the compressor and outdoor motor. The G (indoor motor) circuit is automatically completed on any call for cooling operation or can be energized by manual fan switch on subbase of constant air circulation. On all 230 volt units there is a one-minute off delay on the blower motor. 460 volt models do not have an off delay. On a call for heating, circuit R-W1 make at the thermostat pulling in heat contact for the strip heat and blower operation. On a call for second stage heat, R-W2 makes bringing on second heat contactor, if so equipped.

COMPRESSOR CONTROL MODULE

The compressor control module is standard on the WA391, WA484, WA491and WA602 models covered by this manual and is optional on the WA423 model. The compressor control is an anti-short cycle/lockout timer with high and low pressure switch monitoring and alarm relay output.

Adjustable Delay On Make And Break Timer

On initial power up or anytime power is interrupted to the unit, the *delay on make* period begins, which will be 2 minutes plus 10% of the *delay on break* setting. When the delay on make is complete and the high pressure switch (and low pressure switch if employed) is closed, the compressor contactor is energized. Upon shutdown, the delay or break timer starts and prevents restart until the delay on break and delay on make periods have expired.

During routine operation of the unit with no power interruptions, the compressor will operate on demand with no delay.

High Pressure Switch and Lockout Sequence

If the high pressure switch opens, the compressor contactor will de-energize immediately. The lockout timer will go into a *soft lockout* and stay in soft lockout until the high pressure switch closes and the delay on break time has expired. If the high pressure switch opens again in this same operating cycle, the unit will go into *manual lockout* condition and the alarm relay circuit will energize. Recycling the wall thermostat resets the manual lockout.

Low Pressure Switch, Bypass, and Lockout Sequence

If the low pressure switch opens for more than 120 seconds, the compressor contactor will de-energize and go into a soft lockout. Regardless the state of the low pressure switch, the contactor will reenergize after the delay on make time delay has expired. If the low pressure switch remains open, or opens again for longer than 120 seconds, the unit will go into manual lockout condition and the alarm relay circuit will energize. Recycling the wall thermostat resets the manual lockout.

Alarm Relay Output

Alarm terminal is output connection for applications where alarm relay is employed. This terminal is powered whenever compressor is locked out due to HPC or LPC sequences as described.

NOTE: Both high and low pressure switch controls are inherently automatic reset devices. The high pressure switch and low pressure switch cut out and cut in settings are fixed by specific air conditioner or heat pump unit model. The lockout features, both soft and manual, are a function of the Compressor Control Module.

ADJUSTMENTS

Adjustable Delay on Make and Delay on Break Timer

The potentiometer is used to select Delay on Break time from 30 seconds to 5 minutes. Delay on Make (DOM) timing on power-up and after power interruptions is equal to 2 minutes plus 10% of Delay on Break (DOB) setting:

0.5 minute (30 seconds)	DOB = 123 second DOM
1.0 minute (60 seconds)	DOB = 126 second DOM
2.0 minute (120 seconds)	DOB = 132 second DOM
3.0 minute (180 seconds)	DOB = 138 second DOM
4.0 minute (240 seconds)	DOB = 144 second DOM
5.0 minute (300 seconds)	DOB = 150 second DOM

During routine operation of the unit with no power interruptions the compressor will operate on demand with no delay.

Typical Settings for Dual Unit Installation:

Unit 1: DOB set at 2 minutes, and DOM is 132 seconds

Unit 2: DOB set at 4 minutes, and DOM is 144 seconds

PRESSURE SERVICE PORTS

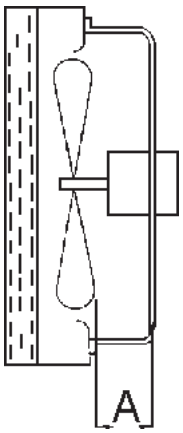
High and low pressure service ports are installed on all units so that the system operating pressures can be observed. A pressure table can be found later in the manual covering all models. It is imperative to match the correct pressure table to the unit by model number.

FAN BLADE SETTING DIMENSIONS

Shown in Figure 9 is the correct fan blade setting dimension for proper air delivery across the outdoor coil.

Any service work requiring removal or adjustment in the fan and/or motor area will require that the dimensions below be checked and blade adjusted in or out on the motor shaft accordingly.

FIGURE 9
FAN BLADE SETTING



MIS-1724

TABLE 5
FAN BLADE DIMENSION

Model	Dimension A
WA381 WA423 WA484 WA491 WA602	1.75

REMOVAL OF FAN SHROUD

1. Disconnect all power to the unit.
2. Remove the screws holding both grilles, one on each side of unit, and remove grilles.
3. Remove screws holding fan shroud to condenser and bottom. Nine (9) screws.
4. Unwire condenser fan motor.
5. Slide complete motor, fan blade, and shroud assembly out the left side of the unit.
6. Service motor/fan as needed.
7. Reverse steps to reinstall.

REFRIGERANT CHARGE

The correct system R-22 charge is shown on the unit rating plate. Optimum unit performance will occur with a refrigerant charge resulting in a suction line temperature (6" from compressor) as shown in Table 6.

TABLE 6
REFRIGERANT CHARGE

Model	Rated Airflow	95 OD Temperature	82 OD Temperature
WA381	1100	50 - 48	48 - 46
WA423	1400	52 - 54	64 - 66
WA484	1550	54 - 56	65 - 67
WA491	1250	48 - 46	47 - 45
WA602	1700	53 - 55	60 - 62

The suction line temperatures in table above are based upon 80° F dry bulb / 67° F wet bulb (50% R.H.) temperature and rated airflow across the evaporator during cooling cycle.

TABLE 7
INDOOR BLOWER PERFORMANCE
CFM @ 230V

E.S.P. In H_20	WA423, WA484				WA602			
	Low 230V		High 230V		Low 230V		High 230V	
	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil
.0	1650	1600	1885	1800	1600	1450	2200	2000
.1	1550	1500	1770	1665	1525	1375	2100	1900
.2	1450	1400	1635	1540	- - -	- - -	2000	1800
.3	1350	1300	1500	1400	- - -	- - -	1875	1700
.4	1300	1175	1370	1285	- - -	- - -	1775	1600
.5	- - -	- - -	1250	1150	- - -	- - -	1650	1475

Table 7A on Page 19 for models WA381 and WA491

TABLE 7A
INDOOR BLOWER PERFORMANCE
CFM @ 230V / 460V

E.S.P. In H_2O	WA381						WA491			
	High Speed		Medium Speed		Low Speed		High Speed		Medium Speed	
	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil
.0	1625	1475	1425	1325	1125	1100	1700	1550	1475	1375
.1	1475	1350	1325	1200	1100	1000	1550	1400	1375	1250
.2	1350	1150	1200	125	1000	850	1400	1250	1250	1100
.3	1150	825	- - -	875	- - -	- - -	1250	1100	1100	- - -

TABLE 8
RECOMMENDED AIRFLOW

Model	Rated CFM *	Rated ESP *	Recommended Airflow Range	Factory Speed Connection
WA381	1100	.15	1250 - 850	Medium
WA423	1400	.30	1600 - 1150	High
WA484	1550	.20	1750 - 1285	High
WA491	1250	.20	1475 - 1100	High
WA602	1700	.30	1950 - 1375	High

TABLE 9
MAXIMUM ESP OF OPERATION
ELECTRIC HEAT ONLY

Model	WA423		WA484		WA602	
KW	High Speed	Low Speed	High Speed	Low Speed	High Speed	Low Speed
-A05	.50	.50	.50	.50	.50	.50
-A10	.50	.50	.50	.50	.50	.50
-A15	.50	.50	.50	.50	.50	.50
-A20	.50	.45	.50	.45	.50	.40
-B00	.50	.50	.50	.50	.50	.50
-B09	.50	.50	.50	.50	.50	.50
-B15	.50	.50	.50	.50	.50	.50
-B18	.50	.50	.50	.50	.50	.50
-C09	.50	.50	.50	.50	.50	.50
-C15	.50	.50	.50	.50	.50	.50

Values shown are for units equipped with standard 1-inch throwaway filter or 1-inch washable filter. Derate ESP by .15 for 2-inch pleated filters.

TABLE 9A
MAXIMUM ESP OF OPERATION
ELECTRIC HEAT ONLY

Model	WA381			WA491	
KW	High Speed	Med Speed	Low Speed	High Speed	Med Speed
-A05	.30	.30	.30	.30	.30
-A08	.30	.30	.30	.40	.40
-A10	.30	.30	.20	.30	.30
-B06	.40	.30	.30	.30	.30
-B09	.40	.30	.30	.30	.30
-C06	.30	.30	.30	.30	.30
-C09	.30	.30	.30	.30	.30

Values shown are for units equipped with standard 1 inch throwaway filter or 1 inch washable filter. Derate ESP by .15 for 2 inch pleated filters.

TABLE 10
PRESSURE TABLE

COOLING

Air Temperature Entering Outdoor Coil °F

Model	Return Air Temperature	Pressure	75	80	85	90	95	100	105	110	115
WA381	75 deg. DB 62 deg. WB	Low Side High Side	74 175	74 187	75 202	76 216	78 232	79 249	79 265	80 284	81 302
	80 deg. DB 67 deg. WB	Low Side High Side	79 179	79 192	80 207	81 222	83 238	84 255	85 272	86 291	87 310
	85 deg. DB 72 deg. WB	Low Side High Side	82 185	82 199	83 214	84 230	86 246	87 264	88 252	89 301	90 321
WA423	75 deg. DB 62 deg. WB	Low Side High Side	70 207	72 220	73 235	75 251	76 266	77 283	78 300	79 318	79 337
	80 deg. DB 67 deg. WB	Low Side High Side	75 212	77 226	78 241	80 257	81 273	82 290	83 308	84 326	85 346
	85 deg. DB 72 deg. WB	Low Side High Side	78 219	80 234	81 249	83 266	84 283	85 300	86 319	87 337	88 358
WA484	75 deg. DB 62 deg. WB	Low Side High Side	73 204	74 217	76 232	78 248	79 265	80 284	82 304	83 325	84 348
	80 deg. DB 67 deg. WB	Low Side High Side	78 210	79 223	81 238	82 254	84 272	86 291	87 312	89 334	90 357
	85 deg. DB 72 deg. WB	Low Side High Side	84 217	85 231	87 247	88 264	90 282	92 302	93 323	95 345	97 369
WA491	75 deg. DB 62 deg. WB	Low Side High Side	70 199	71 213	71 227	72 244	73 260	75 279	76 298	77 320	79 341
	80 deg. DB 67 deg. WB	Low Side High Side	75 204	76 218	76 233	77 250	78 267	80 286	81 306	82 328	84 350
	85 deg. DB 72 deg. WB	Low Side High Side	78 211	79 226	79 241	80 259	81 276	83 296	84 317	85 339	87 362
WA602	75 deg. DB 62 deg. WB	Low Side High Side	71 233	72 247	74 262	75 278	76 295	77 313	78 331	78 351	79 371
	80 deg. DB 67 deg. WB	Low Side High Side	76 237	78 253	79 269	80 285	81 303	82 321	83 340	84 390	85 381
	85 deg. DB 72 deg. WB	Low Side High Side	84 245	85 261	85 278	86 296	87 314	88 333	89 353	90 373	91 394

Low side pressure ± 2 PSIG
High side pressure ± 5 PSIG

Tables are based upon rated CFM (airflow) across the evaporator coil. If there is any doubt as to correct operating charge being in the system, the charge should be removed, system evacuated and recharged to serial plate instructions.

NOTE: Pressure table based on high speed condenser fan operation. If condensing pressures appear elevated check condenser fan wiring. See "Condenser Fan Operation" on Page 16.

TABLE 11
OPTIONAL ACCESSORIES

Part Number	Description	WA381-A	WA381-B	WA381-C	WA423-A	WA423-B	WA423-C	WA484-A	WA484-B	WA484-C	WA491-A	WA491-B	WA491-C	WA602-A	WA602-B	WA602-C
EHWA05-A05	Heater Packages				X			X						X		
EHWA05-A08	Heater Packages				X			X						X		
EHWA05-A10	Heater Packages				X			X						X		
EHWA05-A15	Heater Packages				X			X						X		
EHWA38-A05	Heater Packages	X								X						
EHWA38-A08	Heater Packages	X								X						
EHWA38-A10	Heater Packages	X														
EHWA49-A05	Heater Packages										X					
EHWA05-B09	Heater Packages					X			X						X	
EHWA05-B15	Heater Packages					X			X						X	
EHWA05-B18	Heater Packages					X			X						X	
EHWA38-B06	Heater Packages		X													
EHWA38-B09	Heater Packages		X													
EHWA49-B06	Heater Packages											X				
EHWA05-C09A	Heater Packages			X			X			X			X			X
EHWA05-C15	Heater Packages						X			X						X
EHWA38-C06	Heater Packages		X													X
BOP-5	Blank Off Plate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
BFAD-5	Barometric Fresh Air Damper	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MFAD-5	Motorized Fresh Air Damper	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRV-5	Commercial Ventilator with Exhaust	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EIFM-5	Economizer with Exhaust	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WERV-A5B	Energy Recovery Ventilator	X	X		X	X		X	X		X	X		X	X	
WERV-C5B	Energy Recovery Ventilator			X			X			X			X			X
CMA-6	Low Ambient Control (LAC)	X	X	X	X	X	X	X	X		X	X	X	X	X	X
CMA-10	LPC + HPC + TDR				X	X	X									
CMA-13	LPC + HPC + TDR + LAC				X	X										
CMC-15	Start Kit	X			X			X			X			X		
CMA-16	Low Pressue Control	X	X	X				X	X	X	X	X	X	X	X	X
CMA-18	LPC + LAC	X	X	X				X	X	X	X	X	X	X	X	
WMCB-05B	Circuit Breaker Kit					X			X							
WMCD-01C	Pull Disconnect Kit			X			X			X			X			X
WMCB-08A	Circuit Breaker				X			X			X					
WMCB-09A	Circuit Breaker													X		
WMCB-07B	Circuit Breaker														X	
WMCB-05A	Circuit Breaker	X														
WMCB-04B	Circuit Breaker		X													
WMCB-06B	Circuit Breaker											X				

REPLACEMENT PARTS MANUAL

WALL MOUNTED PACKAGE AIR CONDITIONER

Models: **WA381** **WA424D**
WA423 **WA485D**
WA484 **WA604D**
WA491 **WA602**

General Notes

- Revised and/or additional pages may be issued from time to time.
- A complete and current manual consists of pages shown in the following contents section.

Important

- Contact the installing and/or local Bard distributor for all parts requirements. Make sure you have the complete model and serial number available from the unit rating plates.

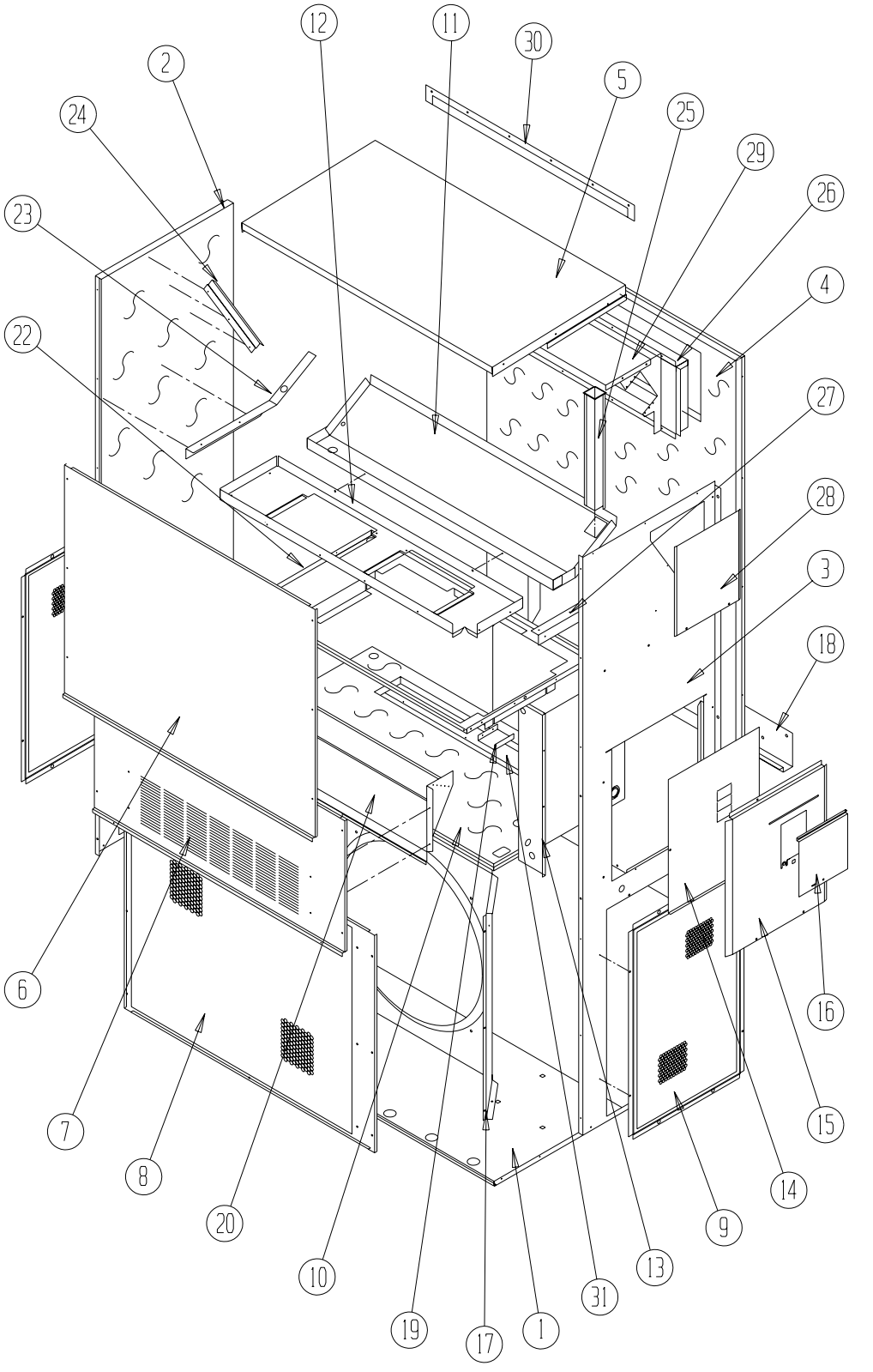
Contents

Bard Manufacturing Company, Inc.
Bryan, Ohio 43506

Since 1914...Moving ahead, just as planned.

Manual: 2110-452D
Supersedes: 2110-452C
File: Tab 16
Date: 01-22-07

CABINET COMPONENTS



This drawing is referenced in Tables on Pages 3 and 4

Dwg. No.	Part Number	Description	WA381-A, B	WA381-C	WA423-A,B,E	WA423-C,F	WA424DA, B	WA424DC	WA484-A,B,E	WA484-C, F	WA485DA,B	WA485DC
1	S127X214	Lower Base	X	X	X	X	X	X	X	X	X	X
2	S500-262-* ①	Left Side	X	X	X	X	X	X	X	X	X	X
3	S500-261-* ①	Right Side	X	X	X	X	X	X	X	X	X	X
4	S508-098	Back	X	X	X	X	X	X	X	X	X	X
5	S506-142-* ①	Top	X	X	X	X	X	X	X	X	X	X
6	S514-077-* ①	Upper Front	X	X	X	X	X	X	X	X	X	X
7	S552-224-* ①	Service Door	X	X	X	X	X	X	X	X	X	X
8	118-048-* ①	Condenser Grille	X	X	X	X	X	X	X	X	X	X
9	118-057-* ①	Side Grille	2	2	2	2	2	2	2	2	2	2
10	S521X258	Condenser Partition	X	X	X	X	X	X	X	X	X	X
11	S123-102	Drain Pan	X	X	X	X	X	X	X	X	X	X
12	121X216	Blower Partition	X	X	X	X	X	X	X	X	X	X
13	Control Panel Assembly	See Control Panel Assembly Drawing and Parts List	X	X	X	X	X	X	X	X	X	X
14 14	S132-114 S132-171	Control Panel Cover (Inner) Control Panel Cover (Inner)	X	X	X	X	X	X	X	X	X	X
15	S533-113-* ①	Control Panel Cover (Outer)	X	X	X	X	X	X	X	X	X	X
16	S153-218-* ①	Disconnect Access Door	X	X	X	X	X	X	X	X	X	X
17	125-024	Fan Shroud	X	X	X	X	X	X	X	X	X	X
18	113-140	Bottom Mounting Bracket	X	X	X	X	X	X	X	X	X	X
19	137-209	Fill	X	X	X	X	X	X	X	X	X	X
20	BFAD-5	Fresh Air Damper Assembly	X	X	X	X	X	X	X	X	X	X
22	131X099	Filter Tray	X	X	X	X	X	X	X	X	X	X
23	105X877	Left Side Support	X	X	X	X	X	X	X	X	X	X
24	147-046	Left Evaporator Support	X	X	X	X	X	X	X	X	X	X
25	135-128	Raceway	X	X	X	X	X	X	X	X	X	X
26	S111X034	Outlet Air Frame Assembly	X	X	X	X	X	X	X	X	X	X
27	105X878	Right Side Support	X	X	X	X	X	X	X	X	X	X
28	S143-042-* ①	Right Side Cover Plate (Outer)	X	X	X	X	X	X	X	X	X	X
29	135-129	Heat Shield	X	X	X	X	X	X	X	X	X	X
30	113-150-* ①	Top Rain Flashing	X	X	X	X	X	X	X	X	X	X
31	S536-258	Cond. Partition Block Off Plate	X	X	X	X	X	X	X	X	X	X

① *Exterior cabinet parts are manufactured with various paint color options. To insure that you receive the proper paint color, you must include the complete model and serial number of the unit for which cabinet parts are being ordered.*

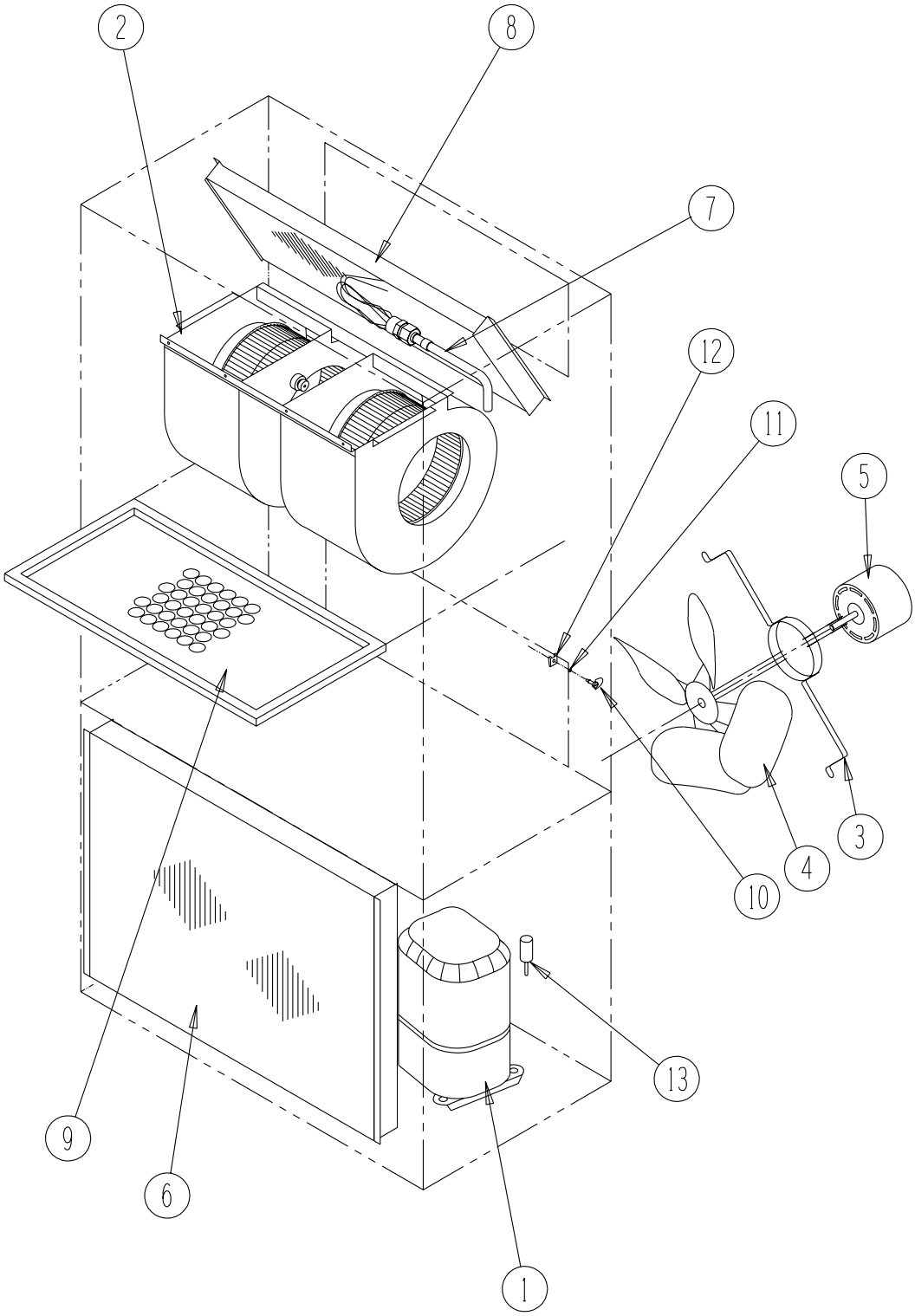
This Table is references drawing on Page 2

CABINET COMPONENTS

Dwg. No.	Part Number	Description	WA491-A, B	WA491-C	WA602-A,B,E	WA602-C,F	WA604DA, B	WA604DC
1	S127X214	Lower Base	X	X	X	X	X	X
2	S500-262-* ①	Left Side	X	X	X	X	X	X
3	S500-261-* ①	Right Side	X	X	X	X	X	X
4	S508-098	Back	X	X	X	X	X	X
5	S506-142-* ①	Top	X	X	X	X	X	X
6	S514-077-* ①	Upper Front	X	X	X	X	X	X
7	S552-224-* ①	Service Door	X	X	X	X	X	X
8	118-048-* ①	Condenser Grille	X	X	X	X	X	X
9	118-057-* ①	Side Grille	2	2	2	2	2	2
10	S521X258	Condenser Partition	X	X	X	X	X	X
11	S123-102	Drain Pan	X	X	X	X	X	X
12	121X216	Blower Partition	X	X	X	X	X	X
13	Control Panel Assembly	See Control Panel Assembly Drawing and Parts List	X	X	X	X	X	X
14	S132-114	Control Panel Cover (Inner)	X		X		X	
14	S132-171	Control Panel Cover (Inner)		X		X		X
15	S533-113-* ①	Control Panel Cover (Outer)	X	X	X	X	X	X
16	S153-218-* ①	Disconnect Access Door	X	X	X	X	X	X
17	125-024	Fan Shroud	X	X	X	X	X	X
18	113-140	Bottom Mounting Bracket	X	X	X	X	X	X
19	137-209	Fill	X	X	X	X	X	X
20	BFAD-5	Fresh Air Damper Assembly	X	X	X	X	X	X
22	131X099	Filter Tray	X	X	X	X	X	X
23	105X877	Left Side Support	X	X	X	X	X	X
24	147-046	Left Evaporator Support	X	X	X	X	X	X
25	135-128	Raceway	X	X	X	X	X	X
26	S111X034	Outlet Air Frame Assembly	X	X	X	X	X	X
27	105X878	Right Side Support	X	X	X	X	X	X
28	S143-042-* ①	Right Side Cover Plate (Outer)	X	X	X	X	X	X
29	135-129	Heat Shield	X	X	X	X	X	X
30	113-150-* ①	Top Rain Flashing	X	X	X	X	X	X
31	S536-258	Cond. Partition Block Off Plate	X	X	X	X	X	X

① *Exterior cabinet parts are manufactured with various paint color options. To insure that you receive the proper paint color, you must include the complete model and serial number of the unit for which cabinet parts are being ordered.*

This Table is references drawing on Page 2



SEXP-177

This Exploded View references Tables on Page 6 and 7

FUNCTIONAL COMPONENTS

Dwg. No.	Part Number	Description	WA381-A	WA381-B	WA381-C	WA423-A	WA423-B, E	WA423-C	WA423-F	WA424DA	WA424DB	WA424DC	WA491-A	WA491-B	WA491-C
1	8000-253	Compressor				X				X					
1	8000-205	Compressor					X				X				
1	8000-206	Compressor						X	X			X			
1	8000-251	Compressor	X												
1	8000-163	Compressor		X											
1	8000-164	Compressor			X										
1	8000-218	Compressor											X		
1	8000-219	Compressor												X	
1	8000-220	Compressor													X
2	S900-183	Blower Assembly				X	X		X	X	X				
2	S900-184	Blower Assembly						X				X			
2	S900-242	Blower Assembly	X	X									X	X	
2	S900-243	Blower Assembly			X										X
3	8200-004	Fan Motor Mount	X	X	X	X	X	X	X	X	X	X	X	X	X
4	5151-027	Fan Blade	X	X	X	X	X	X	X	X	X	X	X	X	X
5	8105-030	Condenser Motor			X			X				X			X
5	8105-039	Condenser Motor	X	X		X	X		X	X	X		X	X	
6	5051-078BX	Condenser Coil	X	X	X	X	X	X	X	X	X	X			
6	5051-074BX	Condenser Coil											X	X	X
7	5651-078	Expansion Valve								X	X	X			
7	800-0319	Cooling Capillary Assembly				X	X	X	X						
7	800-0313	Distributor Assembly	X	X	X										
7	800-0314	Distributor Assembly											X	X	X
8	5060-070BX	Evaporator Coil	X	X	X										
8	917-0077BX	Evaporator Coil								X	X	X			
8	5060-082BX	Evaporator Coil											X	X	X
8	5060-113BX	Evaporator Coil				X	X	X	X						
9	7004-016	Air Filter 1" Throw-Away	X	X	X	X	X	X	X	X	X	X	X	X	X
9	7003-030	Air Filter 1" Washable	X	X	X	X	X	X	X	X	X	X	X	X	X
9	7004-027	Air Filter 2" Pleated	X	X	X	X	X	X	X	X	X	X	X	X	X
10	1171-022	1/4 Turn Fastener	X	X	X	X	X	X	X	X	X	X	X	X	X
11	1171-024	1/4 Turn Retainer	X	X	X	X	X	X	X	X	X	X	X	X	X
12	1171-023	1/4 Receptacle	X	X	X	X	X	X	X	X	X	X	X	X	X
13	1804-0106	High Pressure Switch (Flare)	X	X	X	①	①	①	①				X	X	X
14	5650-043	Rev. Valve Solenoid, Black Casing (Wilspec)								X	X	X			
14	5650-042	Rev. Valve Solenoid, Red Casing (Ranco)								X	X	X			
14	5650-042	Rev. Valve Solenoid, Black Casing (San Hua)								X	X	X			
15	5650-045	Three-Way Valve with 24V Solenoid Coil								X	X	X			
16	800-0271	Drain Back Capillary								X	X	X			
NS	1804-0107	Low Pressure Switch (Flare) ①	X	X	X	X	X	X	X				X	X	X
NS	CMA-6	Low Ambient Control (Flare) ①	X	X	X	X	X	X	X				X	X	X

NS – Not Shown

① – Optional on these models

This Table references Exploded View on Page 5

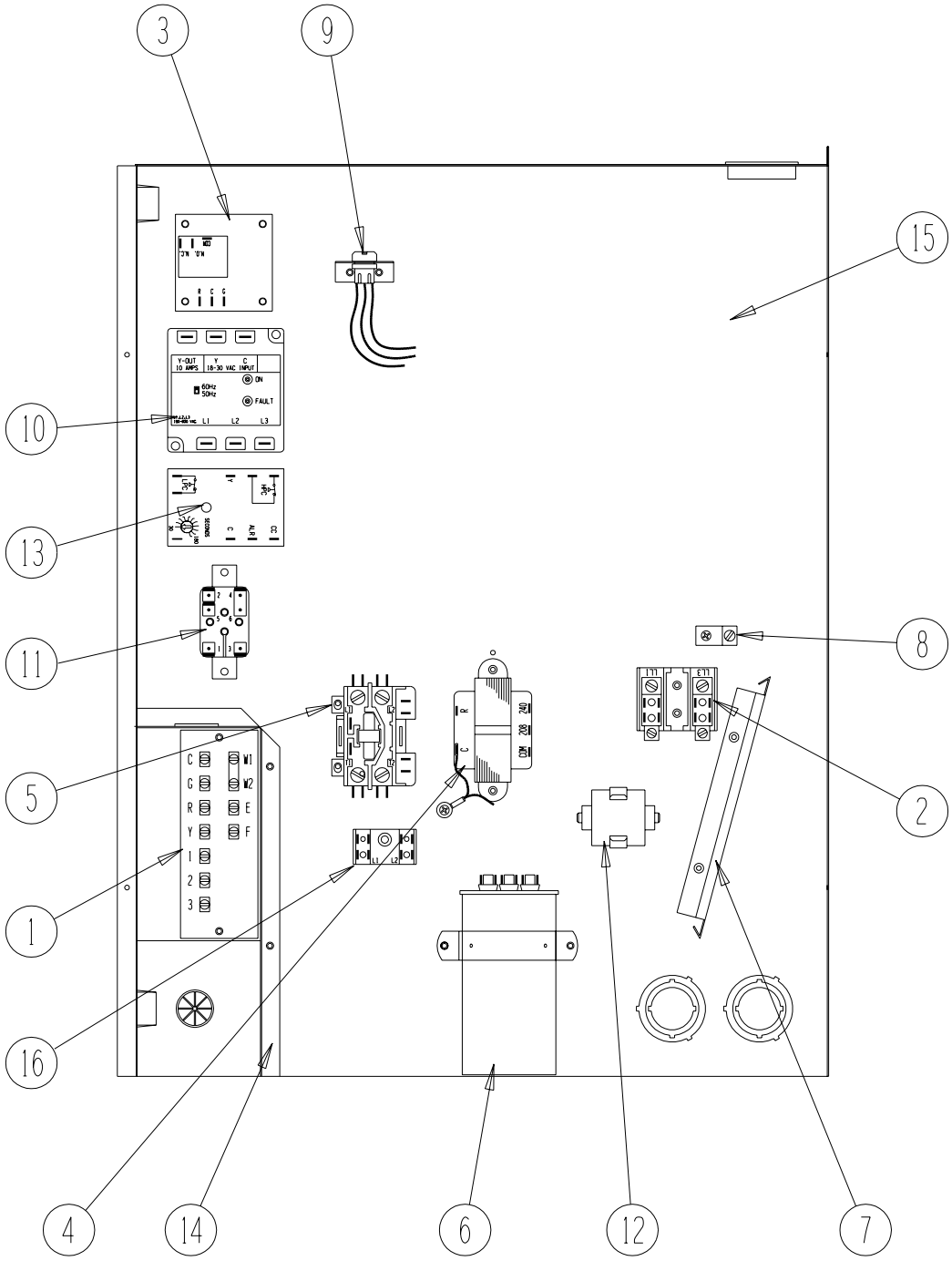
Dwg. No.	Part Number	Description	WA484-A	WA484-B,E	WA484-C	WA484-F	WA485DA	WA485DB	WA485DC	WA602-A	WA602-B,E	WA602-C	WA602-F	WA604DA	WA604DB	WA604DC
1	8000-153	Compressor								X				X		
1	8000-154	Compressor									X				X	
1	8000-155	Compressor										X	X			X
1	8000-236	Compressor	X					X								
1	8000-221	Compressor		X					X							
1	8000-222	Compressor			X	X			X							
2	S900-183	Blower Assembly	X	X		X	X	X								
2	S900-184	Blower Assembly			X				X							
2	S900-185	Blower Assembly								X	X		X	X	X	
2	S900-186	Blower Assembly										X				X
3	8200-004	Fan Motor Mount	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4	5151-027	Fan Blade	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	8105-030	Condenser Motor			X				X			X				X
5	8105-039	Condenser Motor	X	X		X	X	X		X	X		X	X	X	
6	5051-074BX	Condenser Coil	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	5651-078	Expansion Valve					X	X	X							
7	5651-079	Expansion Valve												X	X	X
7	800-0204	Cooling Capillary Assembly	X	X	X	X										
7	800-0209	Cool. Cap. Assy. (S/N before M95)								X	X	X	X			
7	800-0234	Distributor Assembly (S/N starting M95)								X	X	X	X			
8	5060-070BX	Evaporator Coil	X	X	X	X										
8	5060-071BX	Evaporator Coil (S/N before M95)								X	X	X	X			
8	5060-082BX	Evaporator Coil (S/N starting M95)								X	X	X	X			
8	917-0042BX	Evaporator Coil					X	X	X							
8	917-0044BX	Evaporator Coil												X	X	X
9	7004-016	Air Filter 1" Throw-Away	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	7003-030	Air Filter 1" Washable	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	7004-027	Air Filter 2" Pleated	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	1171-022	1/4 Turn Fastener	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11	1171-024	1/4 Turn Retainer	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13	1804-0106	High Pressure Switch (Flare) ①	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	5650-043	Rev. Valve Solenoid, Black Casing (Wilspec)					X	X	X					X	X	X
14	5650-042	Rev. Valve Solenoid, Red Casing (Ranco)					X	X	X					X	X	X
14	5650-046	Rev. Valve Solenoid, Black Casing (San Hua)					X	X	X					X	X	X
15	5650-045	Three-Way Valve with 24V Solenoid Coil					X	X	X					X	X	X
16	800-0272	Drain Back Capillary					X	X	X					X	X	X
NS	CMA-6	Low Ambient Control (Flare)	①	X	X	X	X				X	X	X	X		
NS	1804-0107	Low Pressure Switch (Flare) ①	X	X	X	X				X	X	X	X			

NS – Not Shown

① – Optional on these models

This Table references Exploded View on Page 5

CONTROL PANEL



SEXP-325

This drawing is referenced in Tables on Pages 9 and 10

Drawing No.	Part No.	Description	WA381-A	WA381-B	WA381-C	WA423-A	WA423-B	WA423-C	WA423-E	WA423-F	WA484-A	WA484-B	WA484-C	WA484-E	WA484-F
1	8607-020	Low Voltage Terminal Strip	X	X	X	X	X	X	X	X	X	X	X	X	X
2	8607-013	Terminal Block 2 Pole	X			X				2	X				2
2	8607-014	Terminal Block 3 Pole		X	X		X	X	X			X	X	X	
2	8607-015	Phenolic Insulator			X			X					X		
3	8201-056	Blower Control	X	X		X	X		X	X	X	X		X	X
3	8201-032	Blower Relay			X			X					X		
4	8407-034	Transformer	X	X		X	X		X	X	X	X		X	X
4	8407-042	Transformer			X			X					X		
5	8401-002	Compressor Contactor		X	X		X	X	X	X		X	X	X	X
5	8401-025	Compressor Contactor	X			X					X				
6	8552-005	Outdoor Motor Capacitor		X			X		X	X		X		X	X
6	8552-026	Outdoor Motor Capacitor			X			X					X		
6	8552-055	Compressor Capacitor	X			X									
6	8552-072	Compressor Capacitor									X				
7	135-130	Wire Shield	X	X	X	X	X	X	X	X	X	X	X	X	X
8	8611-006	Ground Terminal	X	X	X	X	X	X	X	X	X	X	X	X	X
9	3000-1017	6 Pin Connector	X	X	X	X	X	X	X	X	X	X	X	X	X
10	8201-085	Phase Monitor		X	X		X	X	X	X		X	X	X	X
11	8201-062	Alarm Relay ①	X	X	X	X	X	X	X	X	X	X	X	X	X
12	8551-004	Start Device	X			X					X				
13	8201-088	Compressor Control Module	X	X	X	①	①	①	①	①	X	X	X	X	X
14	117X139	Low Voltage Box	X	X	X	X	X	X	X	X	X	X	X	X	X
15	117X143	Control Panel	X	X	X	X	X	X	X	X	X	X	X	X	X
16	8607-017	Terminal Block ①	X	X	X	X	X	X	X	X	X	X	X	X	X
NS	8615-038	Circuit Breaker 35A 2 Pole ②	X												
NS	8615-040	Circuit Breaker 50A 2 Pole ②				X					X				
NS	8615-042	Circuit Breaker 35A 3 Pole ②					X		X			X		X	
NS	8615-052	Circuit Breaker 30A 3 Pole ②		X											
NS	WMPD-01C	Pull Disconnect ②			X			X		X			X		X
NS	4095-137	Wiring Diagram				X									
NS	4095-128	Wiring Diagram	X								X				
NS	4095-234	Wiring Diagram					X								
NS	4095-227	Wiring Diagram		X								X			
NS	4095-229	Wiring Diagram												X	
NS	4095-238	Wiring Diagram							X						
NS	4095-321	Wiring Diagram						X							
NS	4095-318	Wiring Diagram			X								X		
NS	4095-623	Wiring Diagram													X
NS	4095-631	Wiring Diagram								X					

① Optional on these models.

② Circuit breakers listed are for units without electric heat "0Z" models. Hot gas bypass models not available without electric heat. See Heater Replacement Parts Manual for units with electric heat.

NS = Not shown

This Table is references drawing on Page 8

CONTROL PANEL

Drawing No.	Part No.	Description	WA491-A	WA491-B	WA491-C	WA602-A	WA602-B	WA602-C	WA602-E	WA602-F
1	8607-020	Low Voltage Terminal Strip	X	X	X	X	X	X	X	X
2	8607-013	Terminal Block 2 Pole	X			X				2
2	8607-014	Terminal Block 3 Pole		X	X		X	X	X	
2	8607-015	Phenolic Insulator			X			X		
3	8201-056	Blower Control	X	X		X	X		X	X
3	8201-032	Blower Relay			X			X		
4	8407-034	Transformer	X	X		X	X		X	X
4	8407-042	Transformer			X			X		
5	8401-002	Compressor Contactor		X	X		X	X	X	X
5	8401-025	Compressor Contactor	X			X				
6	8552-005	Outdoor Motor Capacitor		X			X		X	X
6	8552-026	Outdoor Motor Capacitor			X			X		
6	8552-059	Compressor Capacitor	X							
6	8552-058	Compressor Capacitor				X				
7	135-130	Wire Shield	X	X	X	X	X	X	X	X
8	8611-006	Ground Terminal	X	X	X	X	X	X	X	X
9	3000-1017	6 Pin Connector	X	X	X	X	X	X	X	X
10	8201-085	Phase Monitor		X	X		X	X	X	X
11	8201-062	Alarm Relay ①	X	X	X	X	X	X	X	X
12	8551-004	Start Device (PTCR) ①	X			X				
13	8201-088	Compressor Control Module	X	X	X	X	X	X	X	X
14	117X139	Low Voltage Box	X	X	X	X	X	X	X	X
15	117X143	Control Panel	X	X	X	X	X	X	X	X
16	8607-017	Terminal Block ①	X	X	X	X	X	X	X	X
NS	8615-040	Circuit Breaker 50A 2 Pole ②	X							
NS	8615-043	Circuit Breaker 40A 3 Pole ②		X						
NS	WMPD-01C	Pull Disconnect ②			X			X		X
NS	8615-041	Circuit Breaker 60A 2 Pole ②				X				
NS	8615-044	Circuit Breaker 45A 3 Pole ②					X		X	
NS	4095-128	Wiring Diagram	X			X			X	X
NS	4095-227	Wiring Diagram		X			X		X	X
NS	4095-229	Wiring Diagram							X	X
NS	4095-318	Wiring Diagram			X			X		X
NS	4095-623	Wiring Diagram								X

② Circuit breakers listed are for units without electric heat "0Z" models. Hot gas bypass models not available without electric heat. See Heater Replacement Parts Manual for units with electric heat.

NS = Not shown

This Table is references drawing on Page 8

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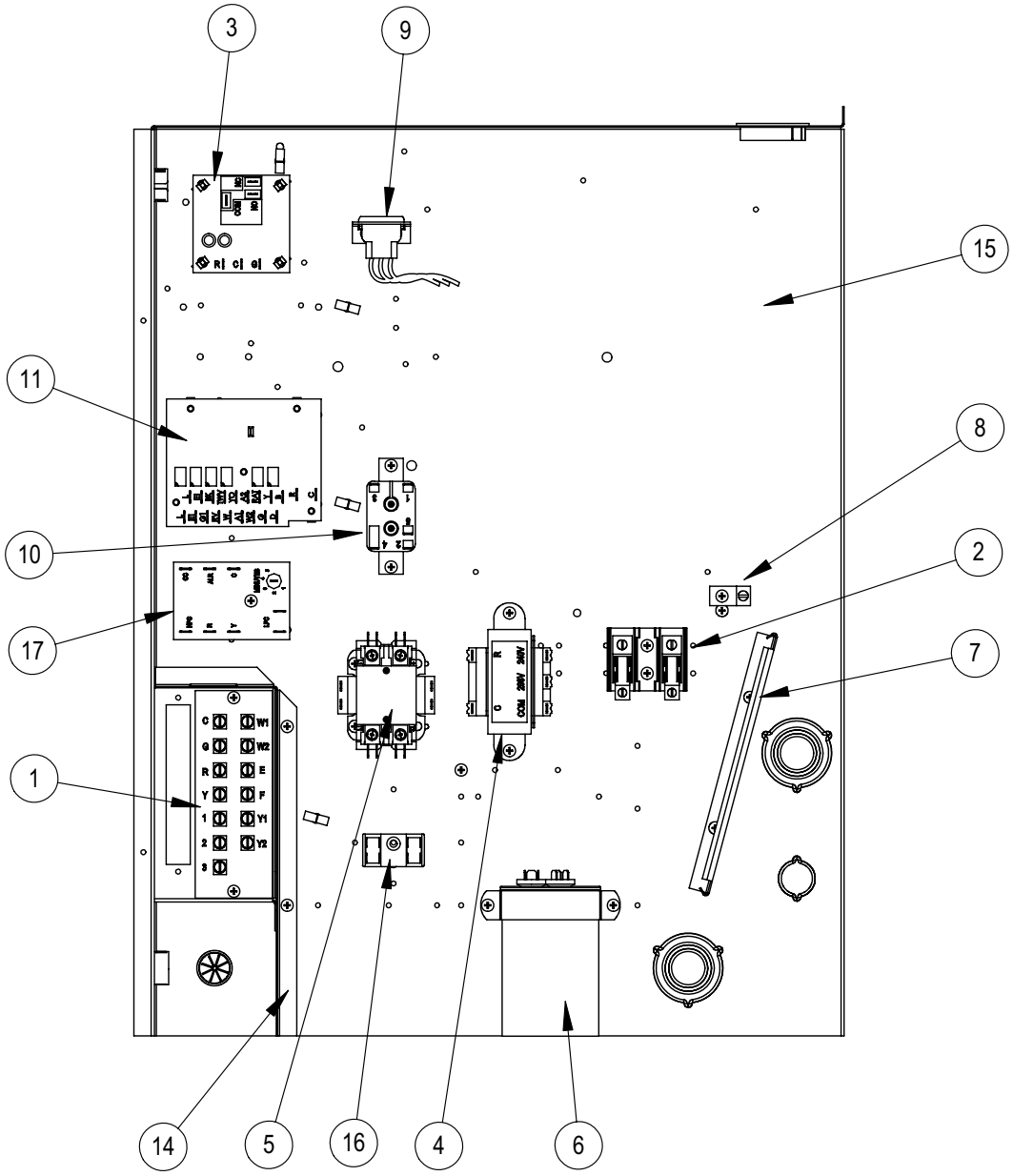
CONTROL PANEL



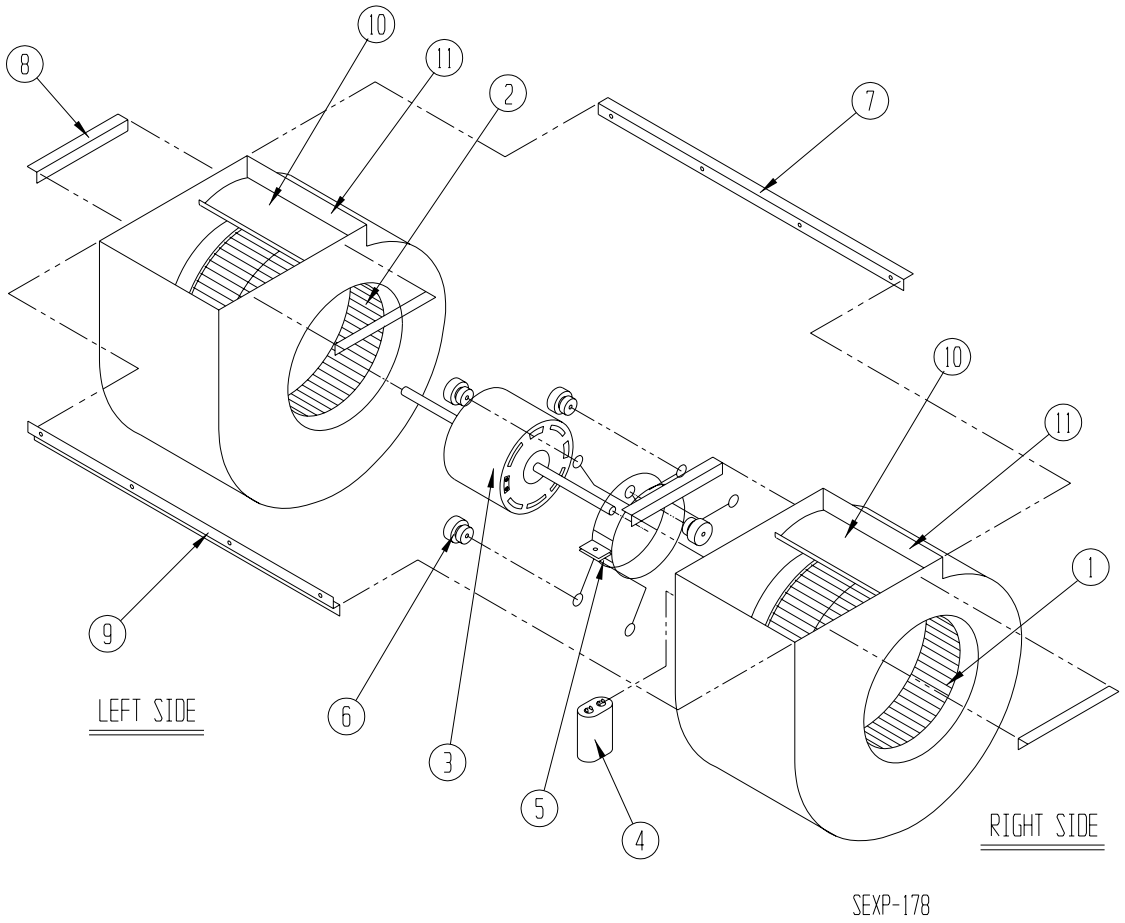
SEXP-455

Dwg. No.	Part Number	Description	WA424DA	WA424DB	WA424DC	WA485DA	WA485DB	WA485DC	WA604DA	WA604DB	WA604DC
1	8607-024	Low Voltage Terminal Strip	X	X	X	X	X	X	X	X	X
2	8607-013	Terminal Block 2 Pole	X			X			X		
2	8607-014	Terminal Block 3 Pole		X	X		X	X		X	X
2	8607-015	Phenolic Insulator			X			X			X
3	8201-056	Blower Control	X	X		X	X		X	X	
3	8201-032	Blower Relay			X			X			X
4	8407-035	Transformer	X	X		X	X		X	X	
4	8407-042	Transformer			X			X			X
5	8401-002	Compressor Contactor		X	X		X	X		X	X
5	8401-025	Compressor Contactor	X			X			X		
6	8552-005	Outdoor Motor Capacitor 10 MFD-370V		X			X			X	
6	8552-026	Outdoor Motor Capacitor 15 MFD-370V			X			X			X
6	8552-058	Compressor Capacitor 80/10 MFD-370V							X		
6	8552-072	Compressor Capacitor 50/10 MFD-370V				X					
6	8552-055	Compressor Capacitor 40/10 MFD-370V	X								
7	135-130	Wire Shield	X	X	X	X	X	X	X	X	X
8	8611-006	Ground Terminal	X	X	X	X	X	X	X	X	X
9	3000-1017	6 Pin Connector	X	X	X	X	X	X	X	X	X
10	8201-062	Relay	X	X	X	X	X	X	X	X	X
11	8201-092	Logic Board	X	X	X	X	X	X	X	X	X
14	117X139	Low Voltage Box	X	X	X	X	X	X	X	X	X
15	117X143	Control Panel	X	X	X	X	X	X	X	X	X
16	8607-017	Terminal Block (Optional)	X	X	X	X	X	X	X	X	X
17	8201-088	Compressor Control Module	X	X	X	X	X	X	X	X	X
NS	8615-040	Circuit Breaker 50A 2 Pole ②	X			X					
NS	8615-042	Circuit Breaker 35A 3 Pole ②		X			X				
NS	WMPD-01C	Pull Disconnect ②			X			X			X
NS	8615-041	Circuit Breaker 60A 2 Pole ②							X		
NS	8615-044	Circuit Breaker 45A 3 Pole ②								X	
NS	4095-136	Wiring Diagram	X								
NS	4095-121	Wiring Diagram				X			X		
NS	4095-220	Wiring Diagram		X			X			X	
NS	4095-316	Wiring Diagram			X			X			X

② Circuit breakers listed are for units without electric heat "0Z" models. Hot gas bypass models not available without electric heat. See Heater Replacement Parts Manual for units with electric heat.

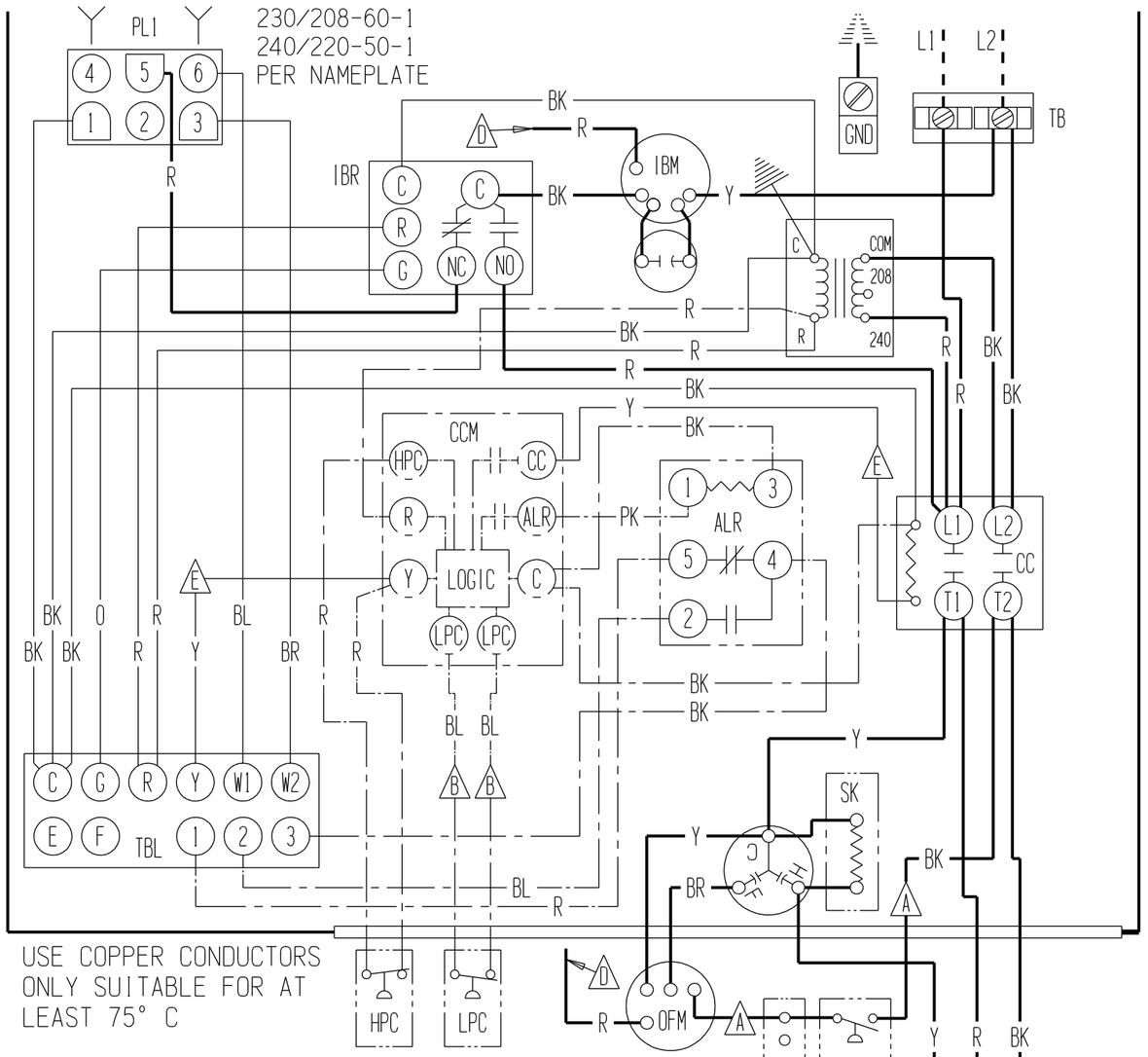
NS = Not shown

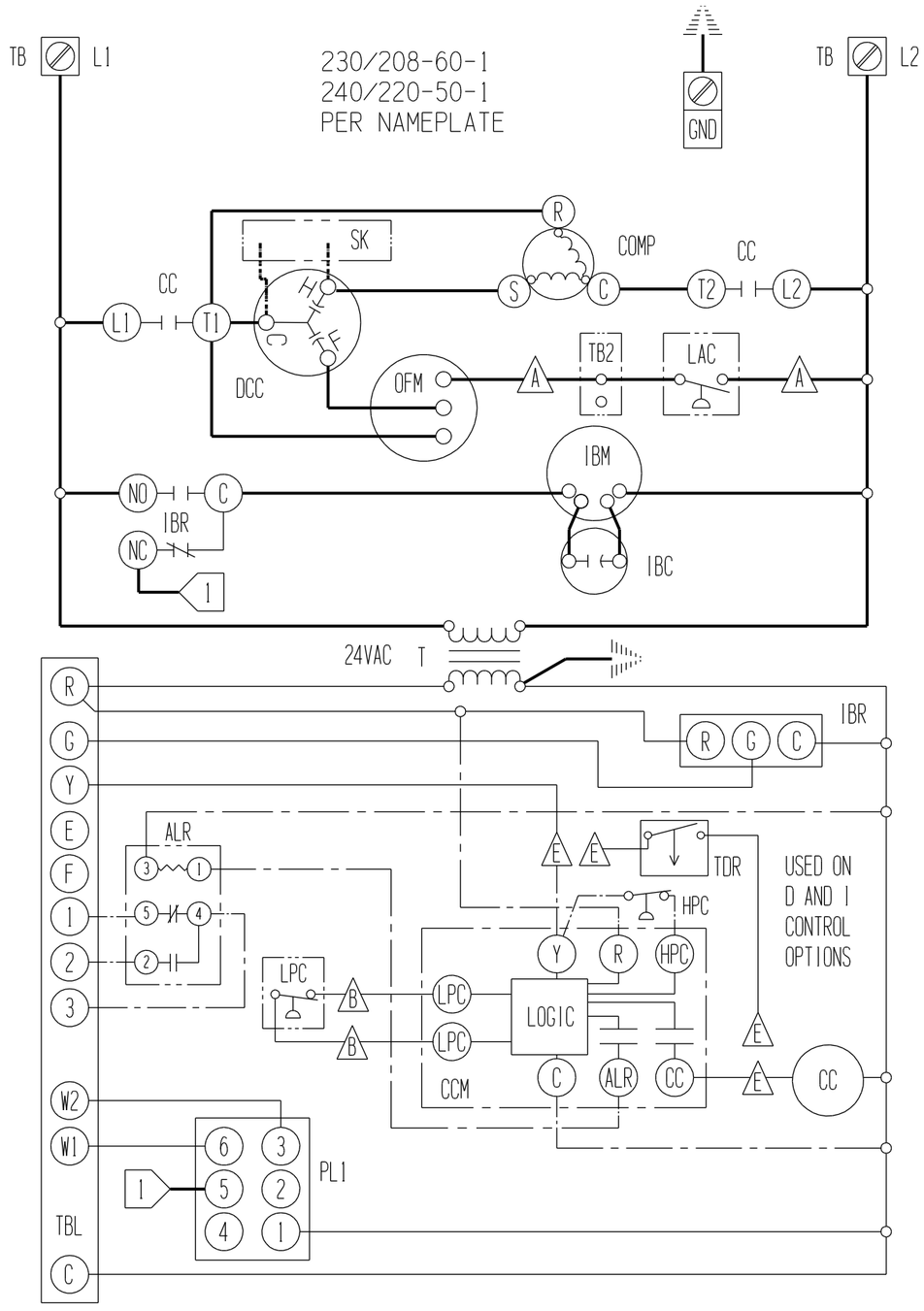
BLOWER ASSEMBLY



SEXP-178

Drawing No.	Part No.	Description	900-183	900-184	900-185	900-186	900-242	900-243
1	5152-011	10 Inch Wheel (CW)			X	X	X	X
1	5152-057	9 Inch Wheel (CW)	X	X				
2	5152-012	10 Inch Wheel (CCW)			X	X	X	X
2	5152-058	9 Inch Wheel (CCW)	X	X				
3	8106-030	Blower Motor (230/208)	X		X			
3	8106-025	Blower Motor (460)		X		X		
3	8104-012	Blower Motor (230/208)					X	
3	8104-014	Blower Motor (460)						X
4	8552-005	Capacitor	X	X	X	X	X	X
5	8200-040	Motor Mount	X	X	X	X	X	X
6	5451-011	Grommets	6	6	6	6	6	6
7	105-881	Back Brace	X	X	X	X	X	X
8	105-880	Side Angle	4	4	4	4	4	4
9	103-389	Front Brace	X	X	X	X	X	X
10	151-101	Housing	2	2	2	2	2	2
11	144-166	Diffuser	2	2	2	2	2	2





COMPONENT CODE

ALR	ALARM RELAY	IBC	INDOOR BLOWER CAPACITOR
CB1	CIRCUIT BREAKER #1	IBM	INDOOR BLOWER MOTOR
CB2	CIRCUIT BREAKER #2	IBR	INDOOR BLOWER RELAY
CC	COMPRESSOR CONTACTOR	LAC	LOW AMBIENT CONTROL
CCM	COMPRESSOR CONTROL MODULE	LPC	LOW PRESSURE CONTROL
COMP	COMPRESSOR	LS	LIMIT SWITCH
DCC	DUAL CAN CAPACITOR	OFM	OUTDOOR FAN MOTOR
GND	EQUIPMENT GROUND	PL1	PLUG #1
H1	HEAT STRIP #1	SK	START KIT
H2	HEAT STRIP #2	T	TRANSFORMER
HC1	HEATER CONTACTOR #1	TB,TB2	TERMINAL BLOCK
HC2	HEATER CONTACTOR #2	TBL	LOW VOLTAGE TERMINAL BLOCK
HPC	HIGH PRESSURE CONTROL	TCO	THERMAL CUTOFF
		TDR	TIME DELAY RELAY

(A) (B) (E) LABELED WIRES CONNECT IF NO OPTIONS USED.

(C) MOVE RED WIRE TO 208V TAP FOR 208V OPERATION

(D) RED (50 HZ ONLY) (LOW) BLACK (HIGH) WHERE APPLICABLE

	FACTORY STD.	FIELD	OPTIONAL
HIGH VOLTAGE	———	- - - - -	—·—·—
LOW VOLTAGE	———	- - - - -	—·—·—
ACCESSORY			—··—··—

COLOR CODE

BK	BLACK	Y	YELLOW	V	VIOLET	T	TAN
BR	BROWN	G	GREEN	(PR)	PURPLE	PK	PINK
R	RED	BL	BLUE	GY	GRAY	L	LAVENDER
O	ORANGE	W	WHITE	(S)	SLATE		

BARD MFG. CO.

4095-137

Limited Warranty

(For units applied within the United States, Canada and Mexico)

Limited Warranty To Original Purchaser

Bard Manufacturing Company, Inc. Bryan, Ohio 43506 warrants to you, the original purchaser, that your Bard product will be free from defects in materials and workmanship when used under normal conditions from the installation date through the time periods outlined in the "Duration of Warranty" section (see reverse side).

Proof Of Purchase

You must be able to show us the date on which you purchased your product when you make a claim under this warranty. Your owner's registration card filed with us or your contractor's invoice, bill of sale, or similar document is sufficient. If you can not show us the actual date of purchase, the time periods in this warranty will start on the date that we shipped your Bard product from our factory.

What This Warranty Does Not Cover (Also see Duration of Warranty on reverse side)

This warranty does not cover defects or damage caused by:

1. Alterations not approved by us; improper installation (including over or under sizing), improper repairs, or servicing; or improper parts and accessories not supplied by us.
2. Misuse or failure to follow installation and operating instructions (including failure to perform preventative maintenance) or limitations on the rating plate.
3. Operation in a corrosive atmosphere (such as acids, halogenated hydrocarbons or coastal environmental conditions).
4. Parts that must be replaced periodically (such as filters, oil nozzles, mist eliminators, WERV belts, pile seals, etc.).
5. Improper fuel or electrical supply (such as low voltage, voltage transients, and power interruption).
6. Accidents or other events beyond our reasonable control (such as storm, fire, or transportation damage).
7. Defects that happen after
   (a) Anyone has tampered with the product.
   (b) The product has been improperly serviced according to accepted trade practices;
   (c) The product has been moved from its original place of installation; or,
   (d) The product has been damaged by an event beyond Bard's control (See also No. 5 above).
8. Consequential damages (such as increased living expenses while the product is being repaired). Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
9. This warranty does not cover units installed on over-the-road trucks, vans and trailers.
10. Cost of service call at installation site to diagnose causes of trouble, labor to replace defective component or transportation costs for replacement parts.
11. Contact Bard Manufacturing Company, Inc. for specific warranty exclusions on products installed outside of the United States, Canada and Mexico.

Your Responsibilities

You are responsible for

1. Preventative maintenance of the product (such as cleaning and replacement of filters, nozzles and other consumable parts).
2. Insuring that the instruction manual is followed for care and use of your product.
3. Insuring that your product is installed by a competent, qualified contractor, following all local and national codes, and industry standards.

What We Will Do About A Defect

We will either repair or replace the defective part only. Replacement parts may be reconditioned parts. The warranty for the repaired or replaced part will last only for the remainder of the warranty period for the original part. For Heat Exchangers that are no longer available, we will give you credit equal to the then current retail price of an equivalent Heat Exchanger.

Defective parts and a properly completed Bard parts warranty form must be returned to a Bard distributor to be eligible for a warranty credit or replacement.

We will not pay or be responsible for labor or defective/replacement part transportation costs or delays in repairing or failures to complete repairs caused by events beyond our reasonable control.

What You Must Do

1. Tell your heating and air conditioning contractor as soon as you discover a problem and have the contractor make repairs.
2. Pay for all transportation, related service labor, diagnostic charges, refrigerant, refrigerant recovery and related items.

Service

If your product requires service, you should contact the contractor who installed it or the contractor that has been providing the product's preventative maintenance and repair service. You may find the installing contractor's name on the product or in your Owner's packet. If you do not know who that is, you should contact a competent, qualified contractor to make the repairs. If in doubt, you should contact the nearest distributor that handles Bard products (see telephone pages). Please note that contractors and distributors that handle Bard products are independent contractors and distributors, and therefore, are not under the direction of Bard Manufacturing Company, Inc.

Only Warranty

This is the only warranty that we make. There are no other express warranties. All implied warranties are limited in duration to the duration of the applicable written warranty made above.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you.

Other Rights

This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Duration Of Warranty

Our warranty and all implied warranties are limited to defects arising during the periods shown in the following table:

Model Number Prefix	- - - Number of Years from Installation Date - - - Parts	Compressor and Heat Transfer Coils ①	Heat Exchanger
AIR CONDITIONERS WA12-WA60, WA3S-WA5S, WL18-WL60, P10, P11, PA13, QA, QC	5 ②	5	N/A
WA70-WA72, CT	1	5	N/A
HEAT PUMPS GSV, PH10, PH11, PH13, QH, QW, CH, SH, WH	5	5	N/A
GAS/ELECTRIC WG	5	5	10
OIL FURNACES FC, FH, FL	5	N/A	LIFETIME ③
SOF	1	N/A	10
ACCESSORIES Factory/Field installed ventilation and heater packages	5	N/A	N/A
MC3000, TEC40, TCS controllers, Humidistats, Thermostats, CS2000A and all other field installed accessories not listed separately	1	N/A	N/A

① Heat transfer coils are covered for leaks for 5 years. Physical damage to coils resulting in leaks or insufficient airflow, or fin deterioration due to corrosive atmosphere (such as acids, halogenated hydrocarbons or coastal environmental conditions) are not covered.

② Parts warranty is 1 year for all telecommunication, electric switch stations, pump stations and similar applications.

③ Limited lifetime warranty on Heat Exchangers applies to original purchaser in private, owner occupied residences. Subsequent owners and commercial uses are warranted for 20 years from date of installation.

IMPORTANT - The Product Registration Card supplied with the product should be completed and mailed immediately upon installation to assure maximum warranty coverage for your product.

Bard® SINCE 1914

CLIMATE CONTROL SOLUTIONS

FOR OWNERS INFORMATION

Product Model No. _____

Unit Serial No. _____

Installation Date _____

Installing Contractor _____

Contractor Phone # _____

BARD MANUFACTURING CO., INC. — P.O. Box 607 — BRYAN, OHIO 43506

Dependable quality equipment . . . since 1914

Form No. 7960-420
Issued: 05/10/06
Supersedes: 03/01/06